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A PROGRAM FOR FITTING AND PLOTTING AMPLITUDES, POLARIZATION AND DIFFERENTIAL CROSS SECTION DATA FOR TWO-BODY REACTIONS*

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PROGRAM SUMMARY

Title of program: EXCAMP

Catalogue number: ABVW

Program obtainable from: CPC Program Library, Queen's University of Belfast, N. Ireland (see application form in this issue)

Computer: CDC 6600 ; *Installation:* University of London Computer Centre

Operating system: NOS/BE

Programming language used: FORTRAN IV

High speed store required: 53K words (includes MINUITS (10K) and APLOT and other plot controlling routines (16K))

Number of bits in a word: 60

Overlay structure: none

Number of magnetic tapes required: none

Other peripherals used: card reader, line printer, CalComp (or CalComp-compatible) plotter or microfilm plotter

Number of cards in combined program and test deck: 3980

Card punching code: CDC extended Hollerith

CPC library subprograms used: MINUITS (reference in CPC: 10(1975)343), APLOT (reference in CPC: 9(1975)85 and 15(1978)437)

Keywords: nuclear, high energy, s-channel helicity amplitudes, amplitude analysis, polarization, Wolfenstein parameters, differential cross section, Gribov-Reggeon calculus, χ^2 minimization.

Nature of the physical problem

This program is concerned with the phenomenological analysis of high-energy $0^{-}\frac{1}{2}^{+} \rightarrow 0^{-}\frac{1}{2}^{+}$ scattering processes in terms of χ^2 fits to amplitude, polarization and differential cross section data. Although the program is written for a model of the amplitudes using the Gribov-Reggeon calculus [1] it can be readily adapted by the user to all other models.

Method of solution

Amplitude analysis has become an important tool in obtaining phenomenological models for high-energy scattering. Procedures, such as that given in [2], which only fit differential cross sections, do not give enough control on all the features of the model used.

The amplitudes were fitted using the scheme of Halzen and Michael [3] where the isovector amplitudes are defined relative to the isoscalar nonflip amplitude. The program could, however, be readily adapted to produce fits to the real and imaginary parts of the amplitudes (e.g., the pion-nucleon amplitude analysis of Höhler et al. [4]). The program is designed to be used under the control of the MINUITS minimization package [5]; a considerable amount of core can be saved when no fitting is required, if MINUITS is replaced by a routine to read in the MINUITS parameters. Plotting of amplitudes, polarization and differential cross sections is achieved using APLOT [6] and the WORDS routine (together with associated routines) [7], the latter for producing the special lettering used. Again the program is designed so that when no plotting is required (e.g., when fitting) the plotting packages can be omitted with core saved.

Restrictions on the complexity of the program

To save computing time, since the program was only used for $\pi^- p \to \pi^o n$ with amplitude fitting only at 6 GeV/c, the phase prescription due to Ambats et al. [8] for the isoscalar amplitude was used to produce the required parallel and perpendicular components of the amplitudes. This restriction can easily be removed; the user could calculate his own isoscalar amplitudes and use them to produce the required isovector amplitude components. Certain other restrictions on the number of processes, number of energy sets, number of data sets and number of experimental points, are described in the comment section of the routine FCN; these are connected with the dimensions of arrays used and can be reset by the user.

Typical running time

The test run (no minimization) took 60 seconds of which 17 seconds was compilation time. On a minimization run, when the program was operating at its most efficient rate, the time taken per call to the routine FCN (for total χ^2 calculation) was about 0.22 seconds.

References

[1] R. W. B. Ardill, P. Koehler and K. J. M. Moriarty, "Azimuthal Correlations in Branch Cut Contributions to $\pi^- p \to \pi^o n$ Scattering," SLAC-PUB-2452, January, 1980; R. W. B. Ardill, K. J. M. Moriarty and P. Koehler, "Phase and Energy Correcting Inelastic Contributions in Multiple Rescattering," SLAC-PUB-2467, February, 1980.

[2] P. A. Collins, B. J. Hartley, R. W. Moore and K. J. M. Moriarty, Comput. Phys. Commun. 5 (1973) 349.

[3] F. Halzen and C. Michael, Phys. Lett. 36B (1971) 367.

[4] G. Höhler, F. Kaiser, R. Koch and E. Pietarinen, "Physik Daten/Physics Data. Handbook of Pion - Nucleon Scattering," Institut für Theoretische Kernphysik der Universität Karlsruhe, Germany.

[5] F. James and M. Roos, Comput. Phys. Commun. 10 (1975) 343.

[6] J. Anderson, K. J. M. Moriarty and R. C. Beckwith, Comput. Phys. Commun. 9 (1975) 85; J. Anderson, R. C. Beckwith, K. J. M. Moriarty and J. H. Tabor, Comput. Phys. Commun. 15 (1978) 437.

[7] Imperial College London program library ICMICFILMFTN.

[8] I. Ambats et al., Phys. Rev. D9 (1974) 1179.

LONG WRITE-UP

1. Introduction

The advent of amplitude analysis, since the pioneer work of Halzen and Michael [1], has allowed a critical assessment of models for two-body high-energy scattering up to ISR energies [2].

The program is designed to handle data from amplitude analysis on an equal footing with polarization and differential cross section data, simply by heading each set of data by the following characters in columns 1 to 3, followed by one blank column:

(a) AMP (for an amplitude data set),

(b) POL (for a polarization data set),

(c) DXS (for a differential cross section data set).

2. Notation

The kinematics for the reactions $0^-\frac{1}{2}^+ \rightarrow 0^-\frac{1}{2}^+$, written schematically as $1+2 \rightarrow 3+4$ where particle 1 is the beam particle and particle 2 the target particle, involves the usual Mandelstam variables

$$s = (p_1 + p_2)^2 \quad , \quad t = (p_1 - p_3)^2 \qquad ,$$

which are, respectively, the square of the total centre-of-mass energy and the momentum transfer (i.e., the latter is related to $\cos\theta$, where θ is the centre-of-mass scattering angle - see Fig. A).

The s-channel helicity amplitudes Φ are then functions of s and t. In line with Halzen and Michael we define for πp scattering the differential cross section (in $mb/(GeV/c)^2$) $d\sigma/dt$, and the Wolfenstein parameters P (polarization), R and A in terms of the helicity nonflip and flip amplitudes Φ_{++} and Φ_{+-}, respectively, as

$$\frac{d\sigma}{dt} = |\Phi_{++}|^2 + |\Phi_{+-}|^2 \quad ,$$

$$P\frac{d\sigma}{dt} = -2\,\mathrm{Im}\left(\Phi_{++}\,\Phi^*_{+-}\right) \quad ,$$

$$R\frac{d\sigma}{dt} = -\left(|\Phi_{++}|^2 - |\Phi_{+-}|^2\right)\cos\theta_R - 2\mathrm{Re}\left(\Phi_{++}\,\Phi^*_{+-}\right)\sin\theta_R \quad ,$$

$$A\frac{d\sigma}{dt} = \left(|\Phi_{++}|^2 - |\Phi_{+-}|^2\right)\sin\theta_R - 2\mathrm{Re}\left(\Phi_{++}\,\Phi^*_{+-}\right)\cos\theta_R \quad ,$$

where θ_R is the proton recoil angle in the laboratory system. The amplitudes are related to the isospin decomposition into isoscalar (F^o) and isovector (F^1) amplitudes by

$$\Phi\left(\pi^\pm p \rightarrow \pi^\pm p\right) = F^o \mp F^1 \quad , \quad \Phi\left(\pi^- p \rightarrow \pi^o n\right) = \sqrt{2}\, F^1 \quad .$$

Halzen and Michael define amplitudes relative to F^o_{++}. The phase of F^o_{++} gives the "parallel direction" (subscript $\parallel$) and a direction at right angles, the "perpendicular direction" (subscript $\perp$).

In the program, since we were examining only $\pi^- p \rightarrow \pi^o n$, we have included only the components F^o_{++}, $(F^1_{++})_\perp$, $(F^1_{++})_\parallel$, $(F^1_{+-})_\perp$, and $(F^1_{+-})_\parallel$. Each amplitude data set is separated into five parts entered in the order just given. Also since we were only concerned with the amplitudes for $\pi^- p \rightarrow \pi^o n$ at 6 GeV/c, in particular those due to Ambats et al. [3], we used the approximate representation of the phase of F^o_{++} as $101^o + 90^o\ |t|$ (with t in $(\mathrm{GeV/c})^2$). This means that the part relating to F^o_{++} in each amplitude data set is effectively ignored in the program, though it must be included in the input.

A user can easily substitute his own form for the isoscalar amplitude phase or include a prior fit to the isoscalar amplitudes, to enable the appropriate components of the isovector amplitudes to be determined. A flag parameter, NEL, set for each process, is provided to distinguish whether the process is elastic or not. If an elastic calculation were made to enable the isoscalar amplitude to be determined, then the user could also extend the existing five parts of the amplitude data sets to seven parts to include the components $(F^{o}_{+-})_{\perp}$ and $(F^{o}_{+-})_{\parallel}$ of the helicity flip isoscalar amplitude, already provided in amplitude analysis data.

3. Plot-handling and special packages

Plots are produced at the end of a run when FCN is called with IFLAG set to 6 (IFLAG is a parameter used by MINUITS [4] to control the path taken in the program - see flow diagram Fig. B) along with a tabulation of the results - plotting can be suppressed in whole or in part by the use of certain parameters read in with the data. Plotting consists of a diaplay of amplitudes (see Figs. 1 to 4 of the TEST RUN OUTPUT), polarization (see Fig. 5 ibid.) and differential cross sections (Figs. 6 and 7). Figure 6 is a display of dσ/dt at a single energy and Fig. 7 shows dσ/dt for a range of energies. The user can choose his own numbering of the axes (to suit the graph) and figure number for each graph. The process captions, the data caption and the χ^2 display are produced automatically.

In order to prevent recalculation or an excessive amount of core store being used, a number of scratch channels is employed. These transfer to and from disc via WRITE and READ statements. The buffer lengths of these are reduced to 70 words each (instead of a default value of around 1000 words each). This necessitates, for the CDC 6600 computer, the inclusion of FILE cards in the job control section of the program and the value of the buffer length for each channel in the PROGRAM card of the program routine.

Plotting can be obtained on paper (via a CalComp or CalComp-compatible paper plotter), or on microfilm (via CalComp 1670 or similar microfilm plotter) with routines simulating the standard CalComp paper plotter routines (as provided in the University of London Computer Centre (ULCC) package "MICROFILM"). In the case of microfilm plotting one graph is produced per 35 mm frame. Plotting is controlled by the presence or absence of a keyword punched on the first data card (of the non-MINUITS data) as follows:

(a) blank - no plotting produced (useful for a minimization run - plotting packages can be omitted with the saving of core store).

(b) PLOT - paper plotting produced, if required.

(c) MICF - microfilm plotting produced, if required.

The program uses the package APLOT [5] to produce the graphs and a package "ICMICFILMFTN" produced at Imperial College, London and available at ULCC; the latter package gives upper and lower case lettering in both the Roman and Greek alphabets (normal or italic) as well as superscript and subscript lettering. Provided one adheres to appropriate conventions for delimiting, the user can substitute his own package for producing the lettering.

A facility is included in the program to prevent loss of information in the event of a time limit being reached before the run is ended. The user merely includes, in the appropriate position in the data, an estimate in seconds of the time required to produce the final tabulation and/or plots for the run, and the program will automatically sense an approaching time limit. This requires some means of providing the program with the total time available for the run - in this deck this is produced by a call to a routine "TIMLIM" available at ULCC on the Royal Holloway College library "RHCLIB6".

4. Description of the code

A flow diagram of the program is shown in Fig. B. We now give an outline of the routines of the program in the order they occur in the deck.

Program routine MINCHI

This is the main routine. It sets up the INPUT/OUTPUT and scratch channels and the time limit, and calls the MINUITS package. The MINUITS specification for numbering the INPUT, OUTPUT and PUNCH channels is adopted; the PUNCH channel is used to produce an output of the MINUITS parameters compatible with the MINUITS input, and the INPUT channel is used to read in the MINUITS parameters. Another INPUT channel is used to read in the non-MINUITS data in subroutine FCN.

Subroutine FCN

This is the controlling routine written to conform with the MINUITS requirements. It gives information on the structure of the program as a whole and how to set up the data (MINUITS parameters and non-MINUITS data). It calls the subroutines DATIN and CALCUL and checks the time against the time limit. If the time used approaches the time limit the program is automatically switched to the final printout and/or graph plotting and the last MINUITS parameter values written out so that they can be preserved on permanent file for re-input on another optimization run.

Subroutine DATIN

This routine inputs the non-MINUITS data and prints out its main features.

Subroutine CALCUL

This routine sets up the relevant kinematics for the processes involved, and by making the appropriate calls to the amplitude routines AMPS, POLEN, POLEF, CUTN, and CUTF together with routine PARAMS (setting up the necessary parameters), calculates amplitudes, polarization (and the other Wolfenstein parameters) and differential cross sections together with χ^2 values based on the input experimental data. CALCUL operates in 3 modes (controlled via MINUITS commands operative on the calling routine FCN):

i) fast mode for optimization, calculating the relevant χ^2 values without any printout,

ii) calculation and printout of fits to the data, and

iii) calculation and tabulation of the amplitudes, showing pole and cut contributions, and polarization and the other Wolfenstein parameters R and A, and differential cross section together with the integrated cross section.

BLOCK DATA

This records the values set to COMMON BLOCK parameters. These include the channel numbers of the scratch channels used mainly in transfer of experimental data and theoretical values used in graph plotting, and also weights and pivots for Gaussian quadrature required for evaluating the integrated cross sections.

Subroutine ROTATE

This routine produces the "rotation" of the amplitudes in the complex plane to produce the parallel and perpendicular components of the isoscalar or isovector amplitudes according to Halzen and Michael's prescription [1].

Subroutine ARG

This routine calculates the argument of a complex number and is used in conjunction with subroutine ROTATE.

Subroutine GRAPHS

This routine produces plots to amplitudes, polarizations and differential cross sections, as required. It is called by the routine CALCUL. It requires the APLOT plotting package [5] together with CalComp routines. The graphical values are read from scratch files, already written to, in the routines DATIN and CALCUL.

Subroutine CHSPLT

This routine controls the plotting advance from one graph to the next. In particular, for microfilm plotting it turns the graph through 90 degrees (to use the film frame more fully) and places each graph on a separate film frame.

Subroutine ROT90

This routine sets a parameter to indicate whether or not the graph is to be turned through 90 degrees. This parameter is involved in the routines PLST, SPANUM, (new versions of these APLOT routines), NUMBIR and SIMBIL.

Subroutine PLST

This routine is a rewrite of an APLOT routine of the same name modified to allow for the possibility of turning the graph through 90 degrees for a microfilm plot. It provides an interface between the APLOT package and the CalComp routine PLOT.

Subroutine SPANUM

This routine is a rewrite of an APLOT routine of the same name, modified to allow for the possibility of turning the graph through 90 degrees for a microfilm plot. It is called by LINAX and LOGAX (and LINAXS and LOGAXS) to produce the numbering of the axes, calling the routine NUMBIR.

Subroutine NUMBIR

This routine provides an interface between this package and the CalComp routine NUMBER, allowing for the possibility of turning the graph through 90 degrees for a microfilm plot.

Subroutine SIMBIL

This routine provides an interface between this package and the CalComp routine SYMBOL and the Imperial College routine WORDS [6], allowing for the possibility of turning the graph through 90 degrees for a microfilm plot. WORDS is used to plot upper and lower case Roman and Greek letters (a key to the necessary controls in using WORDS is provided in the comment section of SIMBIL). SYMBOL is used only to plot special symbols (square roots, brackets, etc.) on microplotting; since the CalComp interface package RHCPLOT, used for paper plotting at Royal Holloway College, does not contain all the special symbols available on SYMBOL, the coding for some of these is included in SIMBIL as calls to PLOT (the CalComp routine).

Subroutines PARAMS, AMPS, POLEN, POLEF, CUTN and CUTF

These routines are written for a Gribov-Regge model of the scattering amplitudes for $0^-\frac{1}{2}^+ \rightarrow 0^-\frac{1}{2}^+$ processes. All these routines can be adapted to suit the requirements of the user's model. Ref. [7] gives the formulae incorporated in the routines AMPS, POLEN, POLEF, CUTN and CUTF.

PARAMS sets up parameters used in the model, interfacing to the MINUITS parameters.

AMPS calculates nonflip and flip amplitudes, calling the routines POLEN, POLEF, CUTN, and CUTF.

POLEN, POLEF calculate the Regge pole parts of the nonflip and flip amplitudes.

CUTN, CUTF calculate the Gribov-Reggeon cuts of the nonflip and flip amplitudes.

It should be noted that POLEN, POLEF, CUTN, and CUTF produce amplitude contributions from only one exchanged Regge pole.

Acknowledgements

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References

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[4] F. James and M. Roos, Comput. Phys. Commun. 10 (1975) 343.

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[6] Imperial College London Program Library ICMICFILMFTN.

[7] R. W. B. Ardill, P. Koehler and K. J. M. Moriarty, "Azimuthal Correlations in Branch Cut Contributions to $\pi^- p \rightarrow \pi^0 n$ Scattering," SLAC-PUB-2452, January, 1980.

FIGURE CAPTIONS

Fig. A. Kinematics of $0^- \frac{1}{2}^+ \rightarrow 0^- \frac{1}{2}^+$ in the centre-of-mass coordinate system.

Fig. B. Flow diagram of the program.

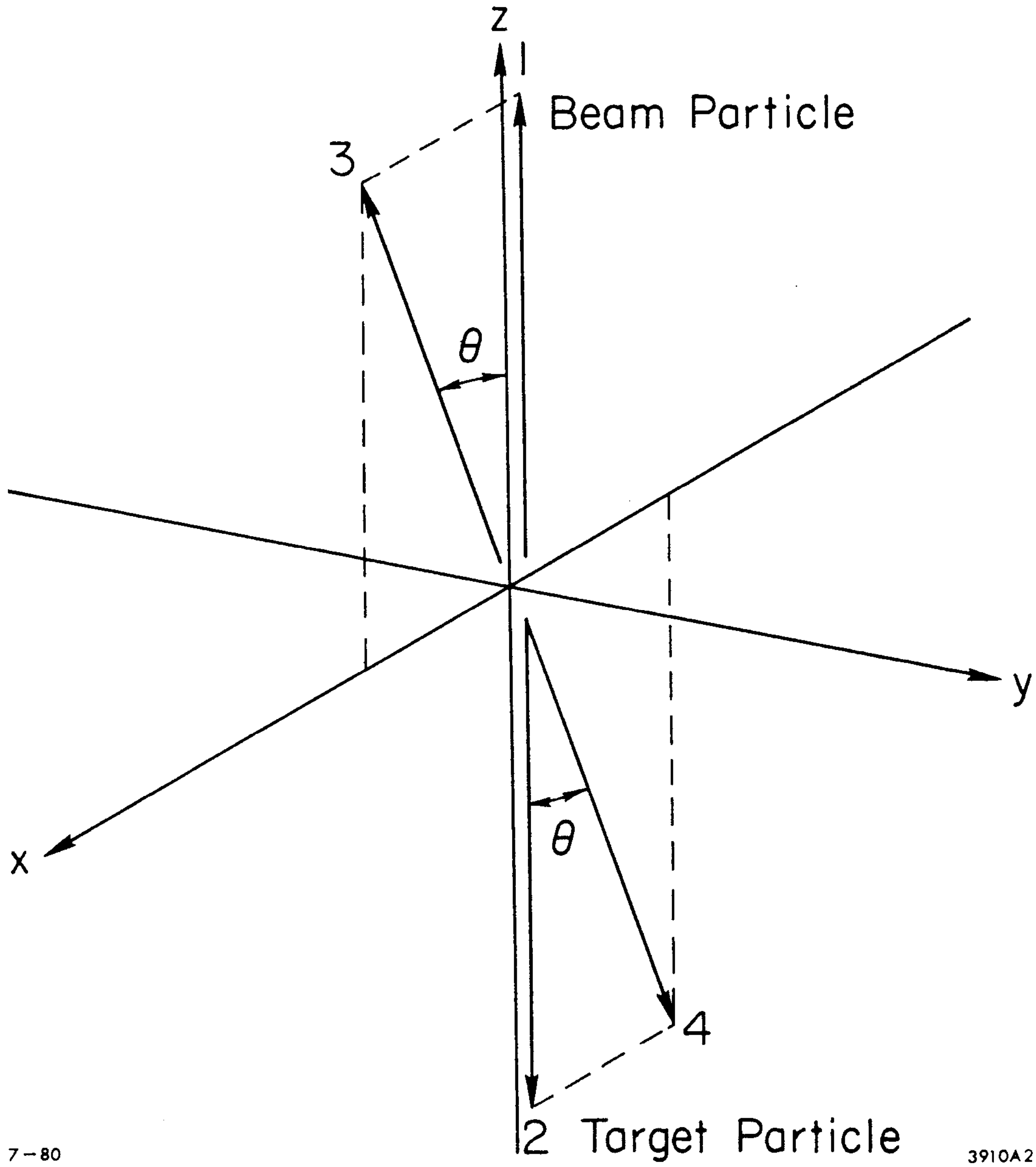


Fig. A

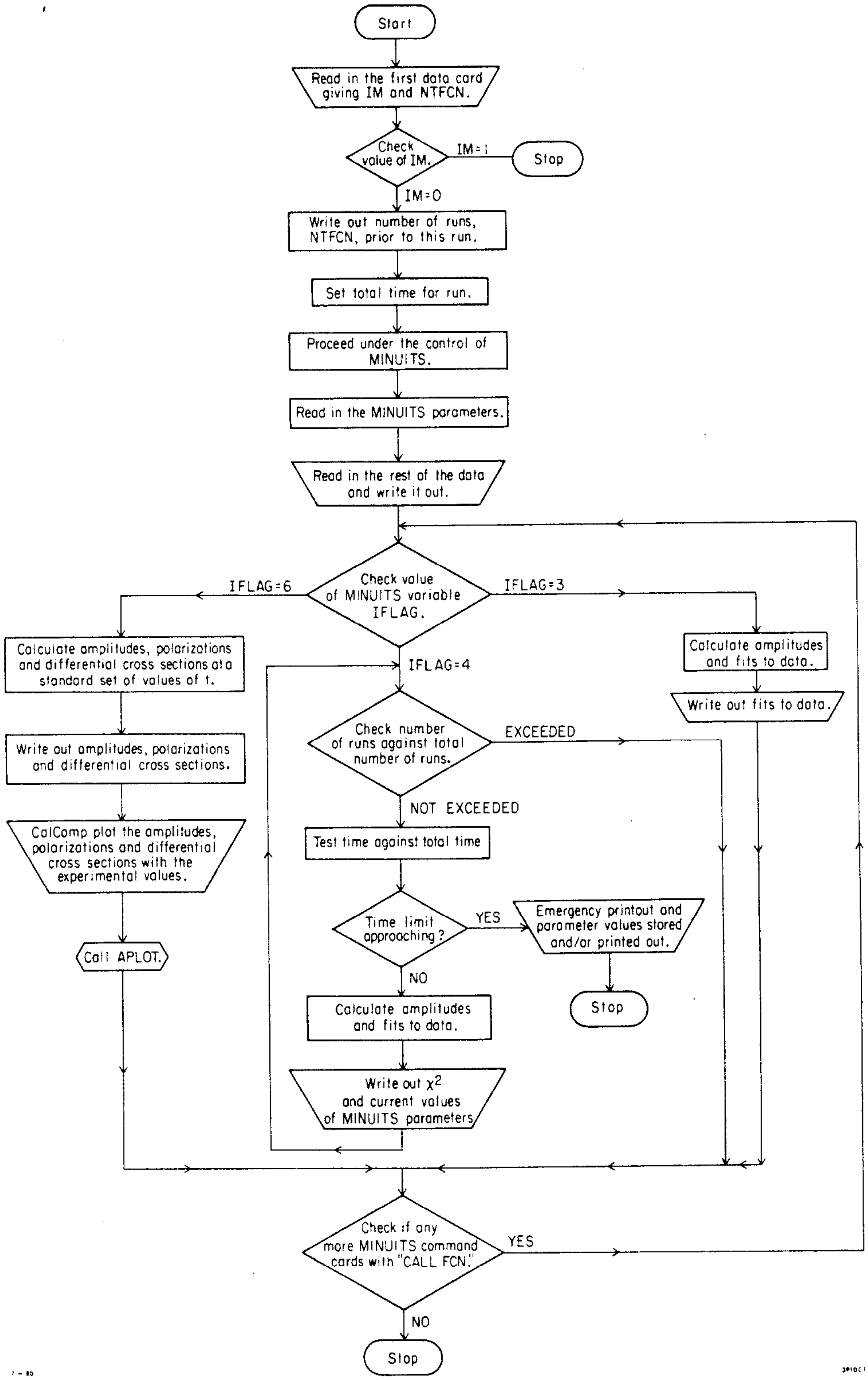

Start
Read in the first data card giving IM and NTFCN.
Check value of IM.
IM=1
Stop
IM=0
Write out number of runs, NTFCN, prior to this run.
Set total time for run.
Proceed under the control of MINUITS.
Read in the MINUITS parameters.
Read in the rest of the data and write it out.
Check value of MINUITS variable IFLAG.
IFLAG=6
IFLAG=3
IFLAG=4
Calculate amplitudes, polarizations and differential cross sections at a standard set of values of t.
Write out amplitudes, polarizations and differential cross sections.
CalComp plot the amplitudes, polarizations and differential cross sections with the experimental values.
Call APLOT.
Calculate amplitudes and fits to data.
Write out fits to data.
Check number of runs against total number of runs.
EXCEEDED
NOT EXCEEDED
Test time against total time
Time limit approaching?
YES
Emergency printout and parameter values stored and/or printed out.
Stop
NO
Calculate amplitudes and fits to data.
Write out χ2 and current values of MINUITS parameters
Check if any more MINUITS command cards with "CALL FCN."
YES
NO
Stop

Fig. B

FIGURE CAPTIONS - TEST RUN OUTPUT

Fig. 1. The perpendicular component of the helicity nonflip ρ amplitude.

Fig. 2. The parallel component of the helicity nonflip ρ amplitude.

Fig. 3. The perpendicular component of the helicity flip ρ amplitude.

Fig. 4. The parallel component of the helicity flip ρ amplitude.

Fig. 5. The polarization of $\pi^- p \to \pi^o n$.

Fig. 6. The differential cross section of $\pi^- p \to \pi^o n$.

Fig. 7. The differential cross sections of $\pi^- p \to \pi^o n$ up to Fermilab energies.

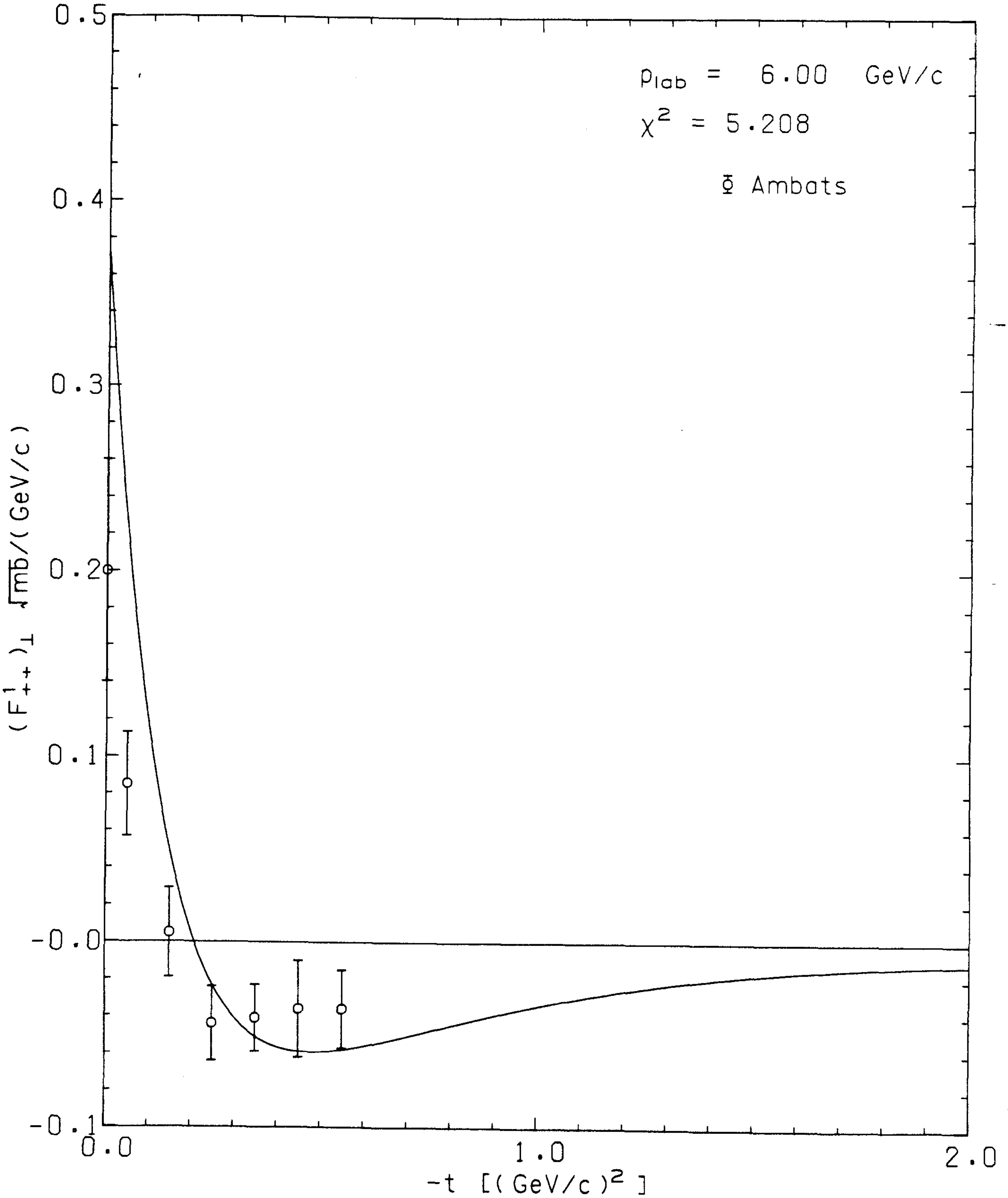

p_{lab} = 6.00 GeV/c
χ^2 = 5.208
Ambats
$(F^1_{++})_\perp$ $\sqrt{mb}$/(GeV/c)
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
0.0
1.0
2.0
−t [(GeV/c)^2]

Fig. 1.

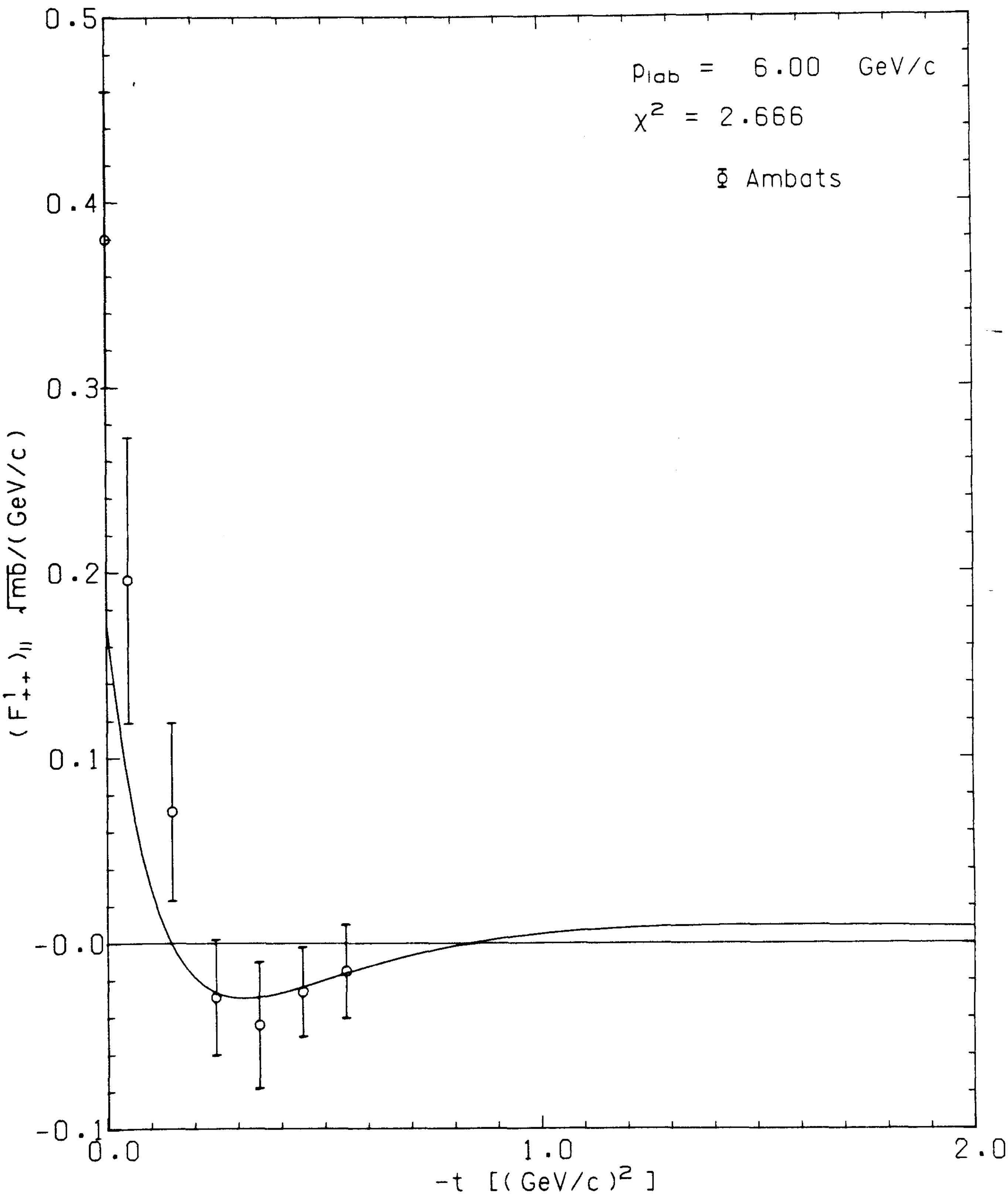

p_{lab} = 6.00 GeV/c
χ^2 = 2.666
Ambats
$(F^{1}_{++})_{11}$ $\sqrt{mb}$/(GeV/c)
-t [(GeV/c)^2]
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
0.0
1.0
2.0

Fig. 2.

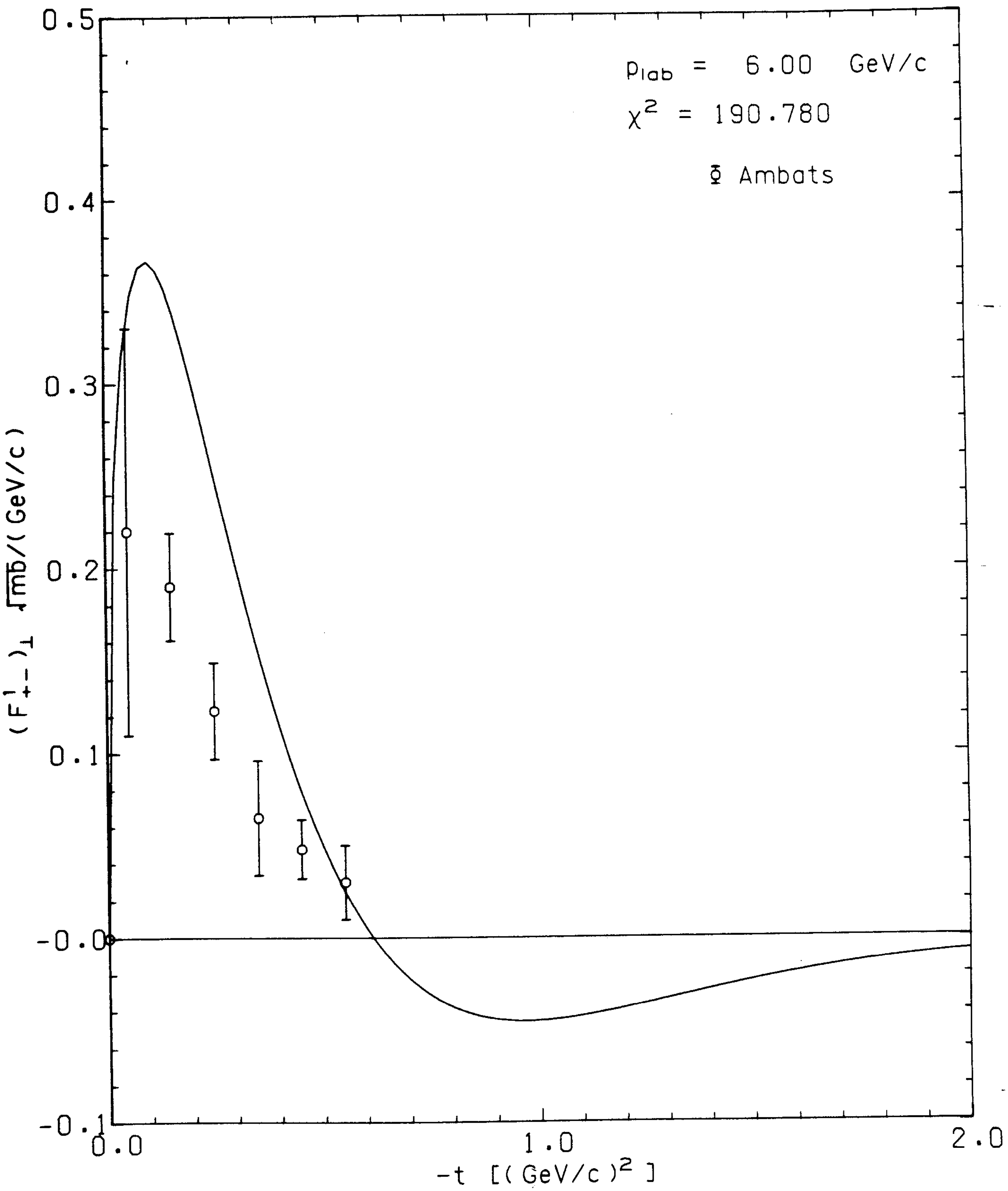
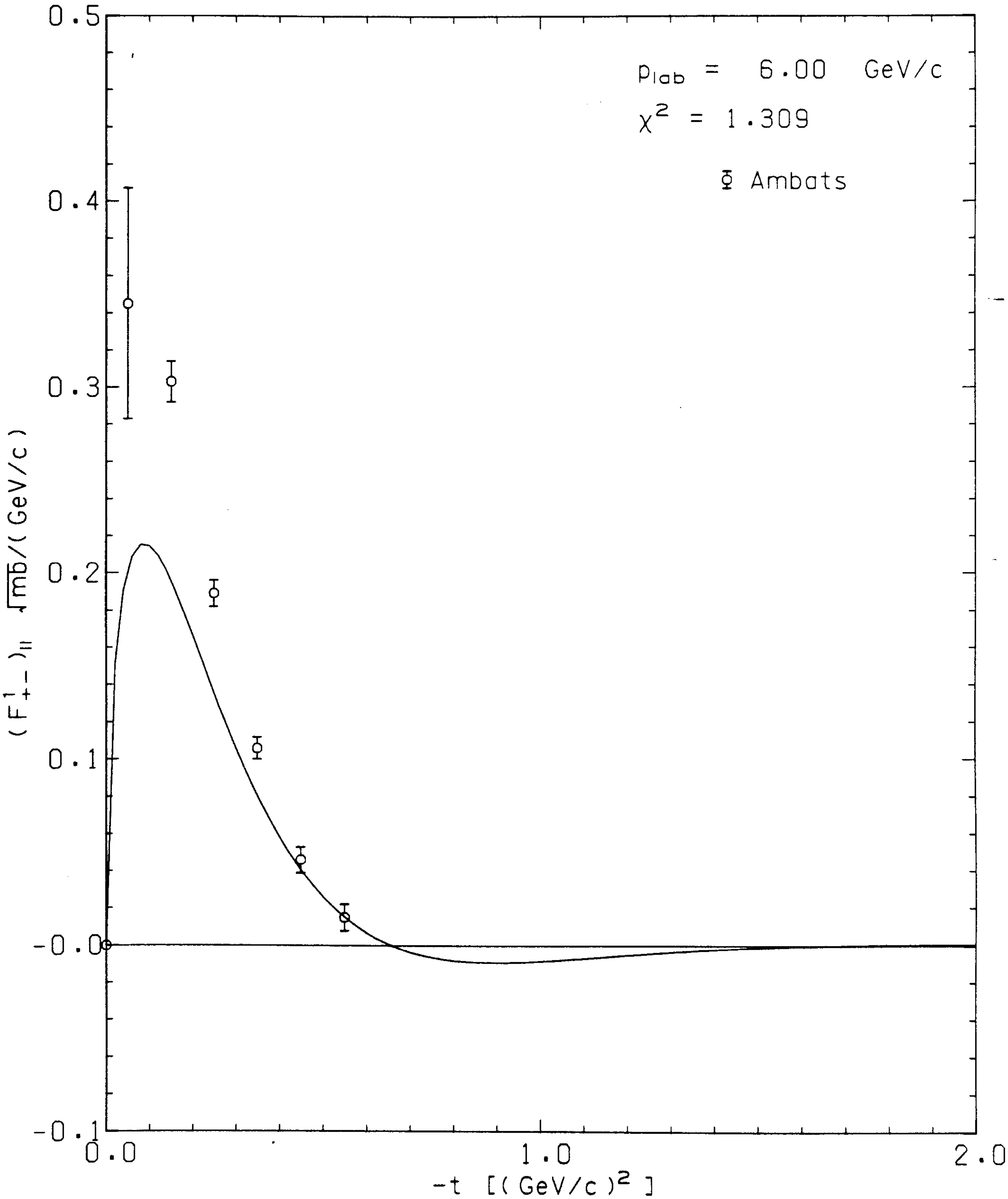
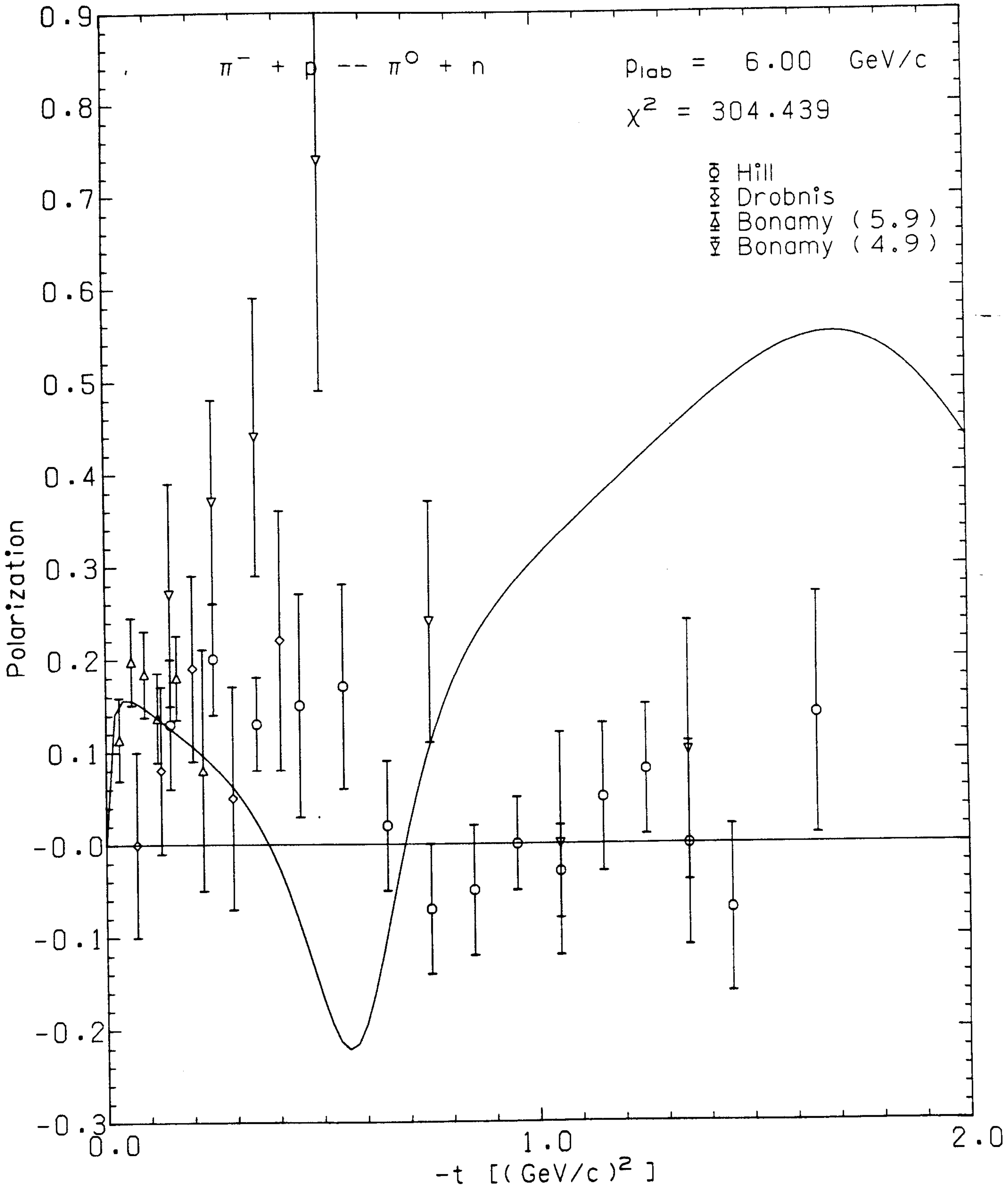

0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
0.0
1.0
2.0
p_{lab} = 6.00 GeV/c
χ^2 = 190.780
Ambats
$(F^1_{+-})_\perp$ $\sqrt{mb}$/(GeV/c)
$-t$ [(GeV/c)^2]

Fig. 3.



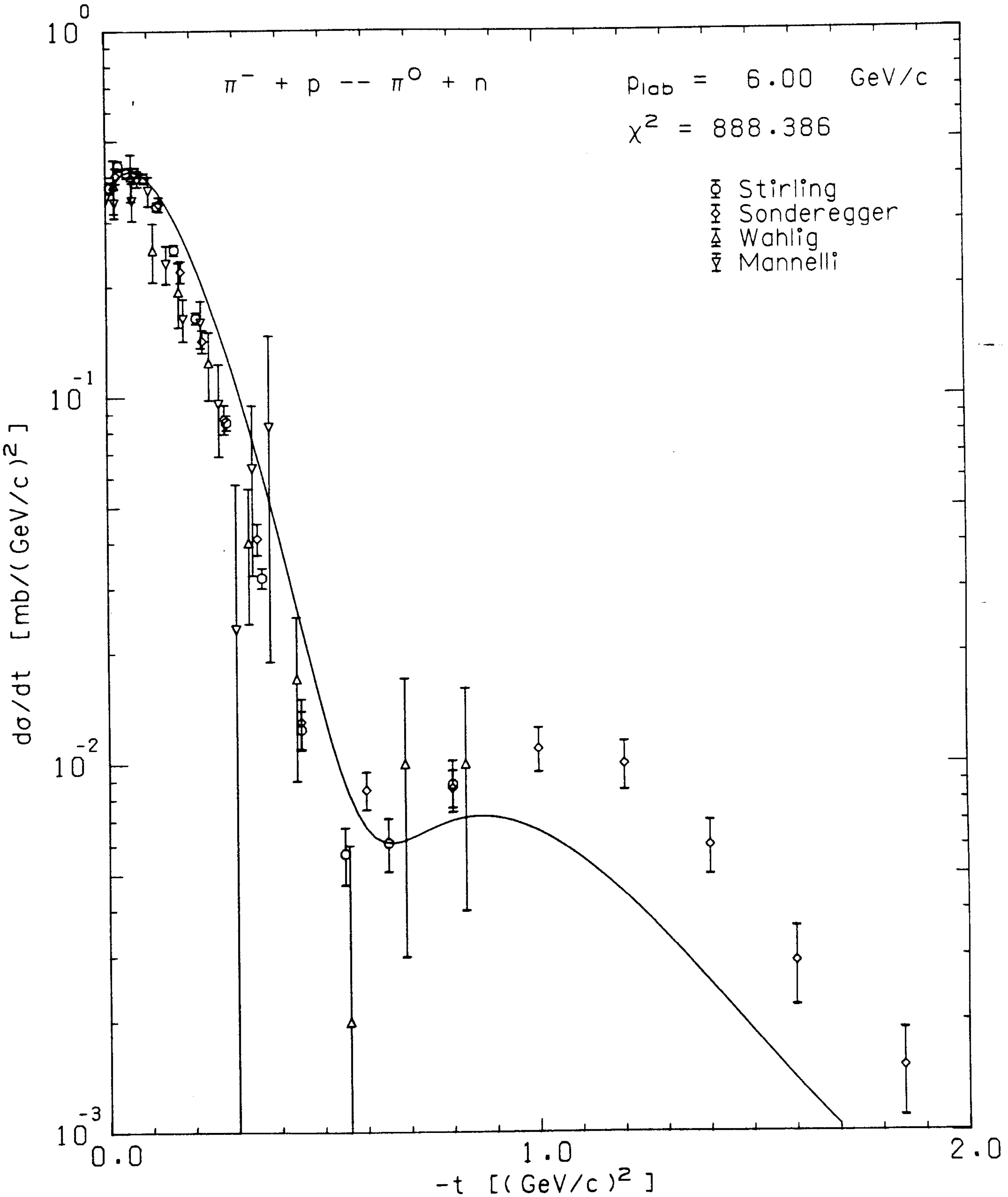
p_lab = 6.00 GeV/c
χ² = 1.309
Ambats
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
0.0
1.0
2.0
(F¹₊₋)₁₁ √mb/(GeV/c)
-t [(GeV/c)²]

Fig. 4.



$\pi^- + p \to \pi^0 + n$
p_{lab} = 6.00 GeV/c
χ^2 = 304.439
Hill
Drobnis
Bonamy (5.9)
Bonamy (4.9)
Polarization
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
-0.0
-0.1
-0.2
-0.3
0.0
1.0
2.0
-t [(GeV/c)²]

Fig. 5.



$\pi^- + p -- \pi^0 + n$
p_{lab} = 6.00 GeV/c
χ^2 = 888.386
Stirling
Sonderegger
Wahlig
Mannelli
10^0
10^{-1}
10^{-2}
10^{-3}
dσ/dt [mb/(GeV/c)^2]
0.0
1.0
2.0
-t [(GeV/c)^2]

Fig. 6.

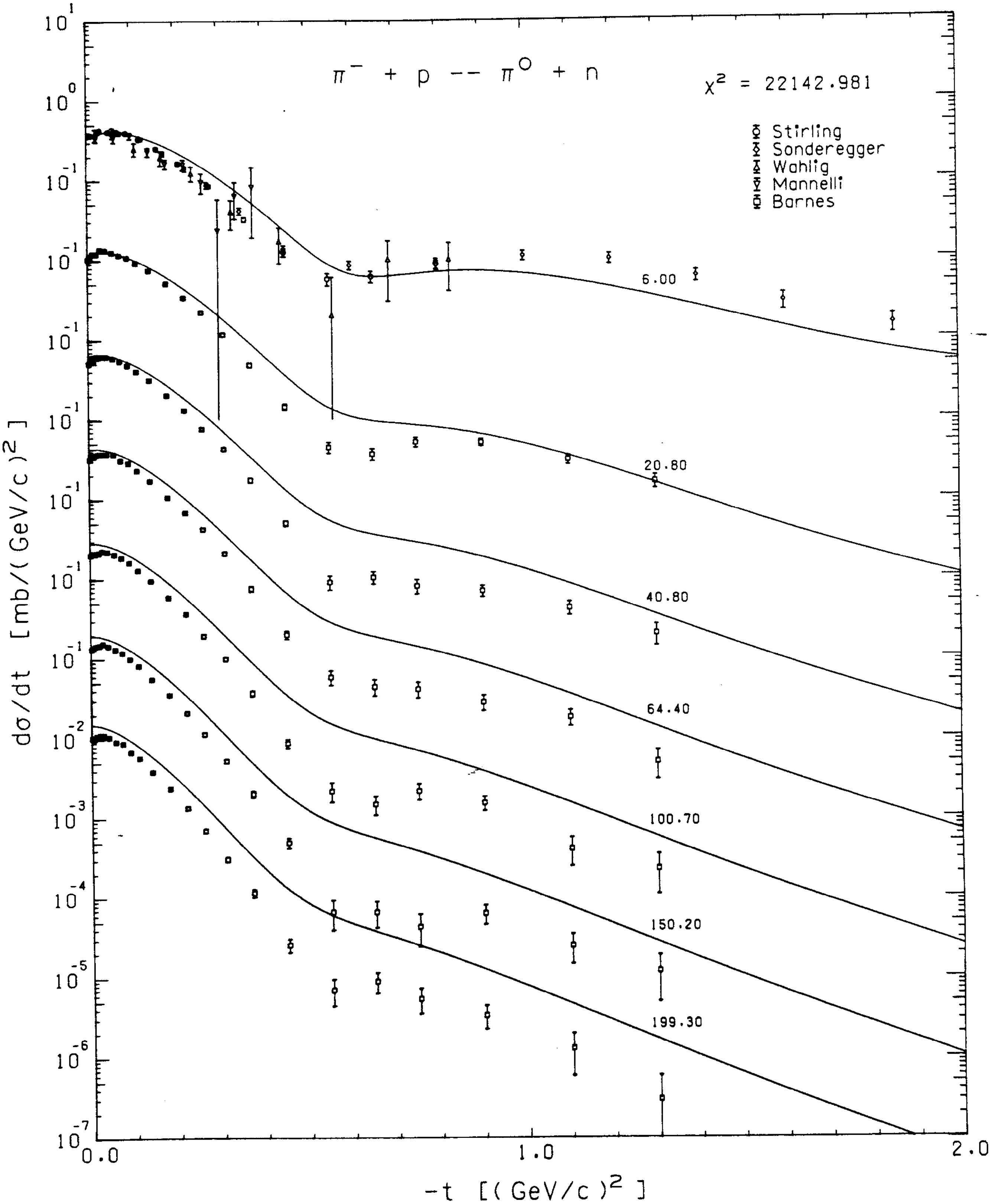

$\pi^- + p -- \pi^0 + n$
χ^2 = 22142.981
Stirling
Sonderegger
Wahlig
Mannelli
Barnes
6.00
20.80
40.80
64.40
100.70
150.20
199.30
dσ/dt [mb/(GeV/c)^2]
-t [(GeV/c)^2]
0.0
1.0
2.0

Fig. 7.

TEST RUN OUTPUT

TOTAL NUMBER OF CALLS TO FCN ON ENTERING THIS RUN = 0

```
                        ************************
                        *   D506    MINUITS    *
                        *   VERSION 11.76      *
                        * DATA BLOCK NO.   1   *
****************************************************************************************************
 PI- P --> PIO N (MINCHI RUN 0001)                                          TIME 19.258
****************************************************************************************************
****************************************************************************************************
      1   BRHON      1.90000    1.00000     0.           3.00000
      2   LHRHON     5.99000    1.00000     0.           10.0000
      3   CN1       -1.32200    1.00000    -4.00000      2.00000
      4   CN2       -.100000    .300000    -1.00000      1.00000
      5   CTN1       0.         .200000    -1.00000      1.00000
      6   CTN2      -.800000    1.00000    -2.00000      2.00000
      7   BHRHOF     30.0000    10.0000     10.0000      50.0000
      8   LHRHOF     1.40000    1.00000     0.           5.00000
      9   CF1       -.800000    1.00000    -2.00000      2.00000
     10   CF2        1.25000    1.00000     0.           5.00000
     11   CTF1       0.         .200000    -1.00000      1.00000
     12   CTF2       8.00000    5.00000     0.           15.0000
     13   LAMBDA     0.
     14   GAMMA      0.
****************************************************************************************************
```

FIRST ENTRY TO FCN

***** DATA SUPPLIED *****

PLTC = MICF - MICROFILM PLOTTING

***** POMERON FIXED PARAMETERS

BETA POMERON NONFLIP	=	6.18000
LAMBDA HAT POMERON NONFLIP	=	2.95000
ALPHA POMERON ZERO	=	1.00000
ALPHA POMERON PRIMED	=	.30000

***** PI- P --> PIO N

AM1 = .140
AM2 = .938
AM3 = .140
AM4 = .938

EXCHANGES

NAME	NO.	G1	G2	G3	G4	REGGE TRAJECTORY ZERO	SLOPE
RHO	1	2.82800	0.00000	0.00000	0.00000	.52000	.80400

PLAB = 6.00

TYPE	SOURCE	T	VALUE	ERROR
AMP. ANALYSIS - AMBATS,I. ET AL., PHYS. REV. D9 (1974) 1179.				
1. PARALLEL COMPONENT OF HELICITY NONFLIP T-CHANNEL I=0				
		0.000000	6.240000	.080000
		-.050000	5.140000	.060000
		-.150000	3.540000	.023000
		-.250000	2.430000	.014000
		-.350000	1.710000	.014000
		-.450000	1.160000	.022000
		-.550000	.834000	.023000
2. PERPENDICULAR COMPONENT OF HELICITY NONFLIP T-CHANNEL I=1				
		0.000000	.380000	.080000
		-.050000	.198000	.077000
		-.150000	.071000	.048000
		-.250000	-.029000	.031000
		-.350000	-.044000	.034000
		-.450000	-.026000	.024000
		-.550000	-.015000	.025000
3. PARALLEL COMPONENT OF HELICITY NONFLIP T-CHANNEL I=1				
		0.000000	.200000	.080000
		-.050000	.085000	.028000
		-.150000	.005000	.024000
		-.250000	-.044000	.020000
		-.350000	-.041000	.018000
		-.450000	-.038000	.026000
		-.550000	-.036000	.021000
4. PERPENDICULAR COMPONENT OF HELICITY FLIP T-CHANNEL I=1				
		0.000000	0.000000	************
		-.050000	.345000	.062000
		-.150000	.303000	.011000
		-.250000	.189000	.007000
		-.350000	.106000	.006000
		-.450000	.046000	.007000
		-.550000	.015000	.007000
5. PARALLEL COMPONENT OF HELICITY FLIP T-CHANNEL I=1				
		0.000000	0.000000	************
		-.050000	.220000	.110000
		-.150000	.190000	.029000
		-.250000	.123000	.026000
		-.350000	.065000	.031000
		-.450000	.048000	.016000
		-.550000	.030000	.020000
POLARIZATION - HILL,D. ET AL., PHYS. REV. LETTS. 30 (1973) 239.				
		-.150000	.130000	.070000
		-.250000	.200000	.060000
		-.350000	.130000	.050000
		-.450000	.150000	.120000
		-.550000	.170000	.110000
		-.650000	.020000	.070000
		-.750000	-.070000	.070000
		-.850000	-.050000	.070000
		-.950000	0.000000	.050000
		-1.050000	-.030000	.050000
		-1.150000	.050000	.080000
		-1.250000	.080000	.070000
		-1.350000	0.000000	.110000
		-1.450000	-.070000	.090000
		-1.650000	.140000	.130000
POLARIZATION - DROBNIS,D.D. ET AL., PHYS. REV. LETTS. 20 (1968) 274.				
		-.071000	0.000000	.100000
		-.128000	.080000	.090000
		-.202000	.190000	.100000
		-.294000	.050000	.120000
		-.405000	.220000	.140000
POLARIZATION - BONAMY,P. ET AL., NUCL. PHYS. B16 (1970) 335. (5.9 GEV/C)				
		-.031000	.114000	.045000
		-.060000	.198000	.047000
		-.090000	.184000	.046000
		-.120000	.137000	.048000
		-.165000	.180000	.045000
		-.225000	.080000	.130000
POLARIZATION - BONAMY,P. ET AL., NUCL. PHYS. B52 (1973) 392. (4.9 GEV/C)				
		-.150000	.270000	.120000
		-.250000	.370000	.110000
		-.350000	.440000	.150000
		-.500000	.740000	.250000
		-.750000	.240000	.130000
		-1.050000	0.000000	.120000
		-1.350000	.100000	.140000
		-1.750000	-.450000	.340080
DIFF. X SECT. - STIRLING,A.V. ET AL., PHYS. REV. LETTS. 14 (1965) 763.				
		-.010000	.374000	.013000
		-.030000	.430000	.013000
		-.050000	.411000	.013000
		-.070000	.412000	.013000
		-.090000	.397000	.013000
		-.120000	.332000	.009000
		-.160000	.252000	.008000
		-.210000	.164000	.006000

-.280000	.085000	.004000
-.360000	.032000	.002000
-.450000	.012400	.001500
-.550000	.005700	.001000
-.650000	.006100	.001000
-.800000	.008800	.001400

DIFF. X SECT. - SONDEREGGER,P. ET AL., PHYS. LETTS. 20 (1966) 75.

-.025000	.404000	.020000
-.075000	.396000	.020000
-.125000	.337000	.015000
-.175000	.220000	.015000
-.225000	.142000	.010000
-.275000	.087000	.008000
-.350000	.041000	.004000
-.450000	.013000	.002000
-.600000	.008500	.001000
-.800000	.008600	.001000
-1.000000	.011000	.001500
-1.200000	.010000	.001500
-1.400000	.006000	.001000
-1.600000	.002900	.000700
-1.850000	.001500	.000400

DIFF. X SECT. - WAHLIG,M.A. AND MANNELLI,I., PHYS. REV. 168 (1968) 1515.

-.020000	.382000	.064000
-.060000	.402000	.059000
-.110000	.252000	.046000
-.170000	.194000	.039000
-.240000	.124000	.026000
-.330000	.040000	.016000
-.440000	.017000	.008000
-.560000	.002000	.004000
-.680000	.010000	.007000
-.830000	.010000	.006000

DIFF. X SECT. - MANNELLI,I. ET AL., PHYS. REV. LETTS. 14 (1965) 408.

-.021400	.340100	.030800
-.062500	.344400	.040800
-.100000	.366500	.033300
-.141100	.231400	.027400
-.180400	.163400	.021600
-.221400	.159400	.023300
-.262500	.095700	.027000
-.300000	.023200	.034300
-.339300	.063500	.031000
-.378600	.082500	.063600

PLAB = 20.80

TYPE SOURCE

DIFF. X SECT. - BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.

T	VALUE	ERROR
-.002000	.104000	.005000
-.006000	.105000	.005000
-.012000	.121000	.005000
-.020000	.120000	.005000
-.028000	.137000	.005000
-.040000	.134000	.004000
-.056000	.126000	.004000
-.072000	.116000	.004000
-.090000	.108000	.003000
-.110000	.092100	.003000
-.140000	.074300	.002100
-.180000	.050900	.001500
-.220000	.033700	.001200
-.260000	.022000	.000900
-.310000	.011600	.000500
-.370000	.004800	.000300
-.450000	.001440	.000130
-.550000	.000440	.000070
-.650000	.000360	.000060
-.750000	.000510	.000070
-.900000	.000500	.000050
-1.100000	.000300	.000040
-1.300000	.000160	.000030

PLAB = 40.80

TYPE SOURCE

DIFF. X SECT. - BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.

T	VALUE	ERROR
-.002000	.050600	.002100
-.006000	.057800	.002300
-.012100	.055200	.001800
-.020000	.059900	.001900
-.028000	.062100	.001900
-.040000	.062100	.001600
-.056000	.059000	.001600
-.072000	.054200	.001500
-.090000	.048000	.001200
-.110000	.040100	.001100
-.140000	.031400	.000800
-.180000	.020200	.000500
-.220000	.013100	.000400
-.260000	.007600	.000300
-.310000	.004240	.000180
-.370000	.001730	.000110
-.450000	.000500	.000040
-.550000	.000090	.000018
-.650000	.000103	.000018
-.750000	.000080	.000016
-.900000	.000069	.000011
-1.100000	.000042	.000008
-1.300000	.000020	.000006

PLAB = 64.40

TYPE SOURCE

DIFF. X SECT. - BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.

T	VALUE	ERROR
-.002000	.032000	.001300
-.006000	.035900	.001400
-.012000	.034500	.001100
-.020000	.036800	.001200
-.028000	.036900	.001200
-.040000	.037000	.001000
-.056000	.036500	.001000
-.072000	.030700	.000900
-.090000	.028400	.000800
-.110000	.022900	.000600
-.140000	.017000	.000400

T	VALUE	ERROR
-.180000	.010600	.000300
-.220000	.006800	.000200
-.260000	.004200	.000180
-.310000	.002090	.000100
-.370000	.000750	.000060
-.450000	.000199	.000023
-.550000	.000058	.000012
-.650000	.000044	.000010
-.750000	.000041	.000009
-.900000	.000028	.000006
-1.100000	.000018	.000004
-1.300000	.000005	.000002

PLAB = 100.70

TYPE SOURCE

DIFF. X SECT. - BARNES.A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.

T	VALUE	ERROR
-.002000	.020300	.000800
-.006000	.021100	.000800
-.012000	.020800	.000700
-.020000	.021500	.000700
-.028000	.022600	.000700
-.040000	.022100	.000600
-.056000	.020500	.000600
-.072000	.018600	.000500
-.090000	.016100	.000400
-.110000	.012900	.000400
-.140000	.009500	.000200
-.180000	.005870	.000170
-.220000	.003640	.000130
-.260000	.001930	.000090
-.310000	.000990	.000050
-.370000	.000370	.000030
-.450000	.000088	.000011
-.550000	.000022	.000006
-.650000	.000015	.000004
-.750000	.000022	.000005
-.900000	.000016	.000003
-1.100000	.000004	.000002
-1.300000	.000002	.000001

PLAB = 150.20

TYPE SOURCE

DIFF. X SECT. - BARNES.A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.

T	VALUE	ERROR
-.002000	.013400	.000500
-.006000	.014000	.000600
-.012000	.014600	.000500
-.020000	.014800	.000500
-.028000	.015600	.000500
-.040000	.014500	.000400
-.056000	.013200	.000400
-.072000	.011900	.000300
-.090000	.010000	.000300
-.110000	.008200	.000200
-.140000	.005540	.000150
-.180000	.003540	.000110
-.220000	.002100	.000080
-.260000	.001150	.000060
-.310000	.000530	.000030
-.370000	.000204	.000019
-.450000	.000050	.000007
-.550000	.000007	.000003
-.650000	.000007	.000002
-.750000	.000004	.000002
-.900000	.000006	.000002
-1.100000	.000003	.000001
-1.300000	.000001	.000001

PLAB = 199.30

TYPE SOURCE

DIFF. X SECT. - BARNES.A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.

T	VALUE	ERROR
-.002000	.010400	.000400
-.006000	.010100	.000400
-.012000	.011000	.000400
-.020000	.011300	.000400
-.028000	.011300	.000400
-.040000	.010600	.000300
-.056000	.009300	.000300
-.072000	.008840	.000260
-.090000	.006860	.000200
-.110000	.005790	.000180
-.140000	.003880	.000110
-.180000	.002400	.000080
-.220000	.001360	.000060
-.260000	.000709	.000040
-.310000	.000311	.000022
-.370000	.000117	.000013
-.450000	.000026	.000005
-.550000	.000007	.000003
-.650000	.000009	.000003
-.750000	.000006	.000002
-.900000	.000003	.000001
-1.100000	.000001	.000001
-1.300000	.000000	.000000

FCN VALUE	CALLS	TIME	EDM
.2264738E+05	1	20.99	0.

INT.	EXT.	PARAMETER	VALUE	ERROR	INTERN.VALUE	INT.STEP SIZE
1	1	BRHON	.19000E+01	.10000E+01	.26993E+00	.80755E+00
2	2	LHRHON	.59900E+01	.10000E+01	.19932E+00	.20567E+00
3	3	CN1	-.13220E+01	.10000E+01	-.10754E+00	.34216E+00
4	4	CN2	-.10000E+00	.30000E+00	-.10017E+00	.30644E+00
5	5	CTN1	0.	.20000E+00	0.	.20136E+00
6	6	CTN2	-.80000E+00	.10000E+01	-.41152E+00	.60997E+00
7	7	BHRHOF	.30000E+02	.10000E+02	0.	.52360E+00
8	8	LHRHOF	.14000E+01	.10000E+01	-.45560E+00	.47864E+00
9	9	CF1	-.80000E+00	.10000E+01	-.41152E+00	.60997E+00
10	10	CF2	.12500E+01	.10000E+01	-.52360E+00	.50980E+00
11	11	CTF1	0.	.20000E+00	0.	.20136E+00
12	12	CTF2	.80000E+01	.50000E+01	.66716E-01	.73336E+00
	13	LAMBDA	0.			
	14	GAMMA	0.			

```
XXXXXXXXXXX
XXX  1XXXXCALL FCN          6.00000
XXXXXXXXXXX
```

***** PI- P —> PI0 N   PLAB = 6.00   TMIN = .0000
KINEMATICS 0 ELAB = 6.00, S = 12.16, W = 3.49, K = 1.61, E1 = 1.62, E2 = 1.87, E3 = 1.62, E4 = 1.87, Q = 1.61

***** NONFLIP AMPLITUDES AT A SERIES OF VALUES OF T *****

T	PHI++ (POLE)		PHI++ (CUT)		PHI++		FPER++ P	FPAR++ P	FPER++ C	FPAR++ C	FPER++	FPAR++
	REAL	IMAG	REAL	IMAG	REAL	IMAG						
-.000	.59052	.55454	-.12022	-.21663	.47030	.33791	.48471	.30524	-.11268	-.13415	.37203	.17109
-.020	.49113	.48512	-.11390	-.20975	.37723	.27537	.41465	.25757	-.11140	-.12678	.30325	.13078
-.040	.40795	.42384	-.10788	-.20310	.30007	.22074	.35470	.21731	-.11002	-.11975	.24468	.09756
-.060	.33841	.36985	-.10214	-.19668	.23627	.17317	.30340	.18332	-.10855	-.11302	.19484	.07030
-.080	.28033	.32236	-.09668	-.19048	.18365	.13188	.25950	.15463	-.10701	-.10660	.15249	.04803
-.100	.23188	.28065	-.09147	-.18449	.14040	.09616	.22195	.13040	-.10540	-.10046	.11655	.02994
-.120	.19150	.24408	-.08652	-.17870	.10498	.06537	.18982	.10996	-.10373	-.09461	.08609	.01535
-.140	.15788	.21205	-.08179	-.17312	.07609	.03893	.16233	.09271	-.10201	-.08902	.06033	.00369
-.160	.12994	.18404	-.07729	-.16772	.05265	.01632	.13882	.07815	-.10024	-.08369	.03858	-.00554
-.180	.10673	.15958	-.07300	-.16251	.03373	-.00293	.11870	.06587	-.09844	-.07861	.02027	-.01274
-.200	.08749	.13825	-.06892	-.15747	.01857	-.01923	.10150	.05551	-.09661	-.07376	.00489	-.01826
-.220	.07156	.11965	-.06502	-.15261	.00653	-.03296	.08678	.04677	-.09475	-.06915	-.00796	-.02238
-.240	.05838	.10347	-.06132	-.14791	-.00293	-.04444	.07420	.03940	-.09287	-.06475	-.01868	-.02535
-.260	.04751	.08941	-.05778	-.14337	-.01027	-.05396	.06344	.03318	-.09099	-.06057	-.02755	-.02738
-.280	.03855	.07719	-.05441	-.13898	-.01586	-.06180	.05423	.02794	-.08909	-.05658	-.03486	-.02864
-.300	.03118	.06658	-.05120	-.13475	-.02002	-.06816	.04636	.02353	-.08719	-.05279	-.04083	-.02926
-.320	.02513	.05739	-.04814	-.13065	-.02302	-.07326	.03963	.01981	-.08529	-.04919	-.04566	-.02938
-.340	.02017	.04944	-.04523	-.12669	-.02506	-.07726	.03387	.01667	-.08339	-.04576	-.04952	-.02909
-.360	.01612	.04255	-.04245	-.12287	-.02633	-.08032	.02895	.01403	-.08151	-.04250	-.05255	-.02847
-.380	.01282	.03659	-.03980	-.11918	-.02699	-.08258	.02475	.01180	-.07963	-.03941	-.05488	-.02761
-.400	.01013	.03145	-.03728	-.11560	-.02715	-.08415	.02115	.00993	-.07776	-.03647	-.05661	-.02654
-.420	.00795	.02701	-.03487	-.11215	-.02692	-.08514	.01808	.00835	-.07591	-.03368	-.05784	-.02533
-.440	.00619	.02318	-.03258	-.10882	-.02638	-.08563	.01545	.00702	-.07408	-.03104	-.05863	-.02402
-.460	.00478	.01988	-.03039	-.10559	-.02561	-.08571	.01320	.00590	-.07227	-.02853	-.05907	-.02263
-.480	.00364	.01704	-.02830	-.10247	-.02466	-.08543	.01128	.00496	-.07048	-.02615	-.05920	-.02119
-.500	.00274	.01459	-.02632	-.09946	-.02358	-.08486	.00964	.00417	-.06871	-.02390	-.05907	-.01973
-.520	.00202	.01249	-.02442	-.09654	-.02240	-.08405	.00823	.00350	-.06697	-.02177	-.05873	-.01827
-.540	.00145	.01069	-.02261	-.09373	-.02116	-.08304	.00704	.00294	-.06525	-.01975	-.05822	-.01681
-.560	.00100	.00913	-.02088	-.09100	-.01988	-.08187	.00601	.00247	-.06356	-.01784	-.05755	-.01537
-.580	.00066	.00780	-.01924	-.08836	-.01858	-.08056	.00514	.00207	-.06190	-.01603	-.05677	-.01396
-.600	.00039	.00666	-.01767	-.08581	-.01727	-.07915	.00439	.00174	-.06027	-.01432	-.05589	-.01258
-.620	.00019	.00568	-.01617	-.08335	-.01598	-.07767	.00375	.00146	-.05867	-.01271	-.05493	-.01125
-.640	.00004	.00485	-.01474	-.08096	-.01470	-.07612	.00320	.00122	-.05711	-.01119	-.05390	-.00996
-.660	-.00007	.00413	-.01337	-.07866	-.01344	-.07453	.00273	.00103	-.05557	-.00975	-.05283	-.00872
-.680	-.00015	.00352	-.01207	-.07642	-.01222	-.07291	.00234	.00086	-.05406	-.00839	-.05173	-.00753
-.700	-.00020	.00299	-.01083	-.07426	-.01103	-.07127	.00199	.00072	-.05259	-.00712	-.05059	-.00640
-.720	-.00024	.00254	-.00964	-.07217	-.00987	-.06963	.00170	.00060	-.05114	-.00591	-.04944	-.00531
-.740	-.00026	.00216	-.00850	-.07015	-.00876	-.06798	.00145	.00051	-.04973	-.00478	-.04828	-.00427
-.760	-.00026	.00184	-.00742	-.06819	-.00768	-.06635	.00124	.00042	-.04836	-.00371	-.04711	-.00329
-.780	-.00026	.00156	-.00638	-.06629	-.00665	-.06473	.00106	.00035	-.04701	-.00271	-.04595	-.00236
-.800	-.00026	.00132	-.00539	-.06445	-.00565	-.06313	.00091	.00030	-.04570	-.00177	-.04479	-.00147
-.820	-.00025	.00112	-.00445	-.06267	-.00469	-.06155	.00077	.00025	-.04442	-.00089	-.04364	-.00064
-.840	-.00024	.00095	-.00354	-.06095	-.00378	-.06000	.00066	.00021	-.04317	-.00006	-.04251	.00015
-.860	-.00022	.00080	-.00267	-.05928	-.00290	-.05847	.00056	.00017	-.04195	.00072	-.04138	.00089
-.880	-.00021	.00068	-.00185	-.05766	-.00205	-.05698	.00048	.00014	-.04077	.00145	-.04029	.00159
-.900	-.00019	.00057	-.00105	-.05609	-.00124	-.05552	.00041	.00012	-.03961	.00213	-.03920	.00225
-.920	-.00017	.00049	-.00029	-.05457	-.00047	-.05409	.00035	.00010	-.03849	.00276	-.03814	.00286
-.940	-.00016	.00041	.00044	-.05310	.00028	-.05268	.00030	.00008	-.03740	.00336	-.03710	.00344
-.960	-.00014	.00035	.00113	-.05167	.00099	-.05132	.00026	.00007	-.03633	.00391	-.03608	.00398
-.980	-.00013	.00029	.00180	-.05028	.00167	-.04999	.00022	.00006	-.03530	.00443	-.03508	.00449
-1.000	-.00012	.00025	.00244	-.04894	.00232	-.04869	.00019	.00005	-.03430	.00491	-.03411	.00496
-1.020	-.00011	.00021	.00306	-.04763	.00295	-.04743	.00016	.00004	-.03332	.00535	-.03317	.00539
-1.040	-.00009	.00017	.00365	-.04637	.00355	-.04619	.00014	.00003	-.03238	.00577	-.03224	.00580
-1.060	-.00008	.00015	.00421	-.04514	.00413	-.04499	.00012	.00003	-.03146	.00615	-.03135	.00618
-1.080	-.00007	.00012	.00476	-.04395	.00469	-.04382	.00010	.00002	-.03057	.00651	-.03047	.00653
-1.100	-.00007	.00010	.00528	-.04279	.00522	-.04268	.00008	.00002	-.02971	.00684	-.02962	.00686
-1.120	-.00006	.00009	.00579	-.04166	.00573	-.04157	.00007	.00002	-.02887	.00714	-.02880	.00715
-1.140	-.00005	.00007	.00627	-.04056	.00622	-.04049	.00006	.00001	-.02806	.00742	-.02800	.00743
-1.160	-.00005	.00006	.00674	-.03950	.00670	-.03944	.00005	.00001	-.02727	.00767	-.02722	.00768
-1.180	-.00004	.00005	.00719	-.03846	.00715	-.03841	.00004	.00001	-.02651	.00791	-.02647	.00792
-1.200	-.00004	.00004	.00763	-.03745	.00759	-.03741	.00004	.00001	-.02578	.00812	-.02574	.00813
-1.220	-.00003	.00004	.00805	-.03647	.00802	-.03644	.00003	.00001	-.02507	.00832	-.02504	.00832
-1.240	-.00003	.00003	.00846	-.03552	.00843	-.03549	.00003	.00001	-.02438	.00849	-.02435	.00850
-1.260	-.00002	.00002	.00885	-.03459	.00883	-.03456	.00002	.00000	-.02371	.00865	-.02369	.00866
-1.280	-.00002	.00002	.00923	-.03368	.00921	-.03366	.00002	.00000	-.02307	.00880	-.02305	.00880
-1.300	-.00002	.00002	.00960	-.03279	.00958	-.03278	.00002	.00000	-.02245	.00893	-.02243	.00893
-1.320	-.00002	.00001	.00996	-.03193	.00994	-.03191	.00001	.00000	-.02185	.00904	-.02184	.00905
-1.340	-.00001	.00001	.01030	-.03109	.01029	-.03107	.00001	.00000	-.02127	.00915	-.02126	.00915
-1.360	-.00001	.00001	.01064	-.03026	.01063	-.03025	.00001	.00000	-.02072	.00924	-.02071	.00924
-1.380	-.00001	.00001	.01097	-.02946	.01096	-.02945	.00001	.00000	-.02018	.00931	-.02017	.00931
-1.400	-.00001	.00001	.01129	-.02867	.01128	-.02866	.00001	.00000	-.01966	.00938	-.01965	.00938
-1.420	-.00001	.00001	.01160	-.02790	.01159	-.02789	.00001	.00000	-.01916	.00944	-.01916	.00944
-1.440	-.00001	.00000	.01190	-.02714	.01189	-.02713	.00001	.00000	-.01868	.00949	-.01868	.00949
-1.460	-.00001	.00000	.01220	-.02640	.01219	-.02639	.00000	.00000	-.01822	.00953	-.01822	.00953
-1.480	-.00001	.00000	.01249	-.02567	.01248	-.02567	.00000	.00000	-.01778	.00956	-.01778	.00956
-1.500	-.00000	.00000	.01277	-.02496	.01276	-.02495	.00000	.00000	-.01735	.00958	-.01735	.00958
-1.520	-.00000	.00000	.01305	-.02425	.01304	-.02425	.00000	.00000	-.01695	.00960	-.01694	.00960
-1.540	-.00000	.00000	.01332	-.02356	.01331	-.02356	.00000	.00000	-.01655	.00961	-.01655	.00961
-1.560	-.00000	.00000	.01358	-.02288	.01358	-.02288	.00000	.00000	-.01618	.00961	-.01618	.00961
-1.580	-.00000	.00000	.01384	-.02221	.01384	-.02221	.00000	.00000	-.01582	.00961	-.01582	.00961
-1.600	-.00000	.00000	.01410	-.02155	.01410	-.02155	.00000	.00000	-.01548	.00960	-.01547	.00960
-1.620	-.00000	.00000	.01435	-.02090	.01435	-.02090	.00000	.00000	-.01515	.00959	-.01515	.00959
-1.640	-.00000	.00000	.01460	-.02025	.01459	-.02025	.00000	.00000	-.01483	.00957	-.01483	.00957
-1.660	-.00000	.00000	.01484	-.01961	.01484	-.01961	.00000	.00000	-.01454	.00954	-.01454	.00954
-1.680	-.00000	.00000	.01508	-.01898	.01508	-.01898	.00000	.00000	-.01425	.00952	-.01425	.00952
-1.700	-.00000	.00000	.01531	-.01835	.01531	-.01835	.00000	.00000	-.01398	.00949	-.01398	.00949
-1.720	-.00000	.00000	.01554	-.01772	.01554	-.01772	.00000	.00000	-.01373	.00945	-.01373	.00945
-1.740	-.00000	.00000	.01577	-.01710	.01577	-.01710	.00000	.00000	-.01349	.00942	-.01349	.00942
-1.760	-.00000	.00000	.01599	-.01648	.01599	-.01648	.00000	.00000	-.01326	.00937	-.01326	.00937
-1.780	-.00000	.00000	.01621	-.01586	.01621	-.01586	.00000	.00000	-.01304	.00933	-.01304	.00933
-1.800	-.00000	.00000	.01642	-.01524	.01642	-.01524	.00000	.00000	-.01284	.00928	-.01284	.00928
-1.820	-.00000	.00000	.01664	-.01463	.01663	-.01463	.00000	.00000	-.01265	.00923	-.01265	.00923
-1.840	-.00000	.00000	.01684	-.01401	.01684	-.01401	.00000	-.00000	-.01248	.00918	-.01248	.00918
-1.860	-.00000	.00000	.01704	-.01339	.01704	-.01339	.00000	-.00000	-.01231	.00912	-.01231	.00912
-1.880	-.00000	.00000	.01724	-.01276	.01724	-.01276	.00000	-.00000	-.01216	.00907	-.01216	.00907
-1.900	-.00000	-.00000	.01743	-.01213	.01743	-.01213	.00000	-.00000	-.01202	.00901	-.01202	.00901
-1.920	-.00000	-.00000	.01762	-.01150	.01762	-.01150	.00000	-.00000	-.01189	.00894	-.01189	.00894
-1.940	-.00000	-.00000	.01780	-.01087	.01780	-.01087	.00000	-.00000	-.01178	.00888	-.01178	.00888
-1.960	-.00000	-.00000	.01798	-.01022	.01798	-.01022	.00000	-.00000	-.01167	.00881	-.01167	.00881
-1.980	-.00000	-.00000	.01814	-.00957	.01814	-.00957	.00000	-.00000	-.01158	.00873	-.01158	.00873
-2.000	-.00000	-.00000	.01830	-.00892	.01830	-.00892	.00000	-.00000	-.01150	.00866	-.01150	.00866

xxxxx PI- P —> PI0 N PLAB = 6.00 TMIN = .0000
KINEMATICS 0 ELAB = 6.00, S = 12.16, W = 3.49, K = 1.61, E1 = 1.62, E2 = 1.87, E3 = 1.62, E4 = 1.87, Q = 1.61

xxxxx FLIP AMPLITUDES AT A SERIES OF VALUES OF T xxxxx

T	PHI+- (POLE) REAL	PHI+- (POLE) IMAG	PHI+- (CUT) REAL	PHI+- (CUT) IMAG	PHI+- REAL	PHI+- IMAG	FPER+- P	FPAR+- P	FPER+- C	FPAR+- C	FPER+-	FPAR+-
-.000	.00024	.00023	-.00001	-.00001	.00023	.00022	.00020	.00013	-.00001	-.00001	.00019	.00012
-.020	.30289	.29918	-.01196	-.01477	.29093	.28441	.25572	.15884	-.01056	-.00831	.24516	.15054
-.040	.37756	.39227	-.01561	-.01952	.36196	.37275	.32827	.20112	-.01416	-.01057	.31412	.19055
-.060	.40662	.44439	-.01765	-.02235	.38897	.42204	.36454	.22027	-.01644	-.01164	.34811	.20863
-.080	.41180	.47354	-.01883	-.02415	.39297	.44939	.38120	.22714	-.01798	-.01207	.36322	.21508
-.100	.40271	.48742	-.01946	-.02528	.38326	.46214	.38547	.22648	-.01904	-.01209	.36642	.21438
-.120	.38474	.49038	-.01971	-.02595	.36504	.46444	.38137	.22092	-.01975	-.01186	.36162	.20906
-.140	.36131	.48527	-.01969	-.02627	.34162	.45899	.37149	.21215	-.02020	-.01145	.35129	.20071
-.160	.33469	.47407	-.01948	-.02634	.31521	.44772	.35757	.20130	-.02043	-.01092	.33714	.19038
-.180	.30650	.45828	-.01913	-.02622	.28737	.43206	.34089	.18915	-.02051	-.01031	.32038	.17884
-.200	.27786	.43906	-.01868	-.02595	.25918	.41311	.32236	.17628	-.02045	-.00965	.30191	.16663
-.220	.24957	.41732	-.01815	-.02557	.23142	.39175	.30268	.16311	-.02028	-.00896	.28240	.15415
-.240	.22221	.39381	-.01757	-.02510	.20463	.36871	.28240	.14994	-.02003	-.00826	.26237	.14168
-.260	.19616	.36913	-.01696	-.02457	.17920	.34456	.26191	.13700	-.01971	-.00756	.24220	.12944
-.280	.17169	.34376	-.01632	-.02399	.15536	.31977	.24153	.12445	-.01933	-.00687	.22220	.11758
-.300	.14896	.31812	-.01568	-.02338	.13329	.29474	.22149	.11241	-.01891	-.00620	.20258	.10621
-.320	.12808	.29253	-.01503	-.02274	.11305	.26979	.20198	.10095	-.01846	-.00555	.18353	.09540
-.340	.10905	.26726	-.01438	-.02208	.09467	.24518	.18314	.09012	-.01797	-.00492	.16516	.08520
-.360	.09189	.24254	-.01375	-.02141	.07815	.22112	.16505	.07996	-.01747	-.00432	.14758	.07564
-.380	.07654	.21853	-.01312	-.02075	.06342	.19779	.14778	.07048	-.01695	-.00375	.13084	.06673
-.400	.06294	.19539	-.01251	-.02008	.05044	.17531	.13140	.06167	-.01641	-.00321	.11498	.05846
-.420	.05101	.17320	-.01191	-.01941	.03910	.15379	.11591	.05354	-.01588	-.00271	.10003	.05083
-.440	.04064	.15207	-.01133	-.01876	.02930	.13331	.10133	.04605	-.01534	-.00223	.08599	.04382
-.460	.03173	.13203	-.01077	-.01811	.02096	.11392	.08766	.03919	-.01479	-.00178	.07287	.03741
-.480	.02419	.11314	-.01023	-.01748	.01395	.09566	.07489	.03293	-.01426	-.00136	.06064	.03157
-.500	.01789	.09541	-.00971	-.01686	.00818	.07856	.06301	.02724	-.01372	-.00097	.04928	.02627
-.520	.01273	.07885	-.00921	-.01625	.00352	.06260	.05198	.02209	-.01319	-.00061	.03878	.02148
-.540	.00861	.06345	-.00874	-.01565	-.00013	.04780	.04178	.01745	-.01267	-.00027	.02911	.01718
-.560	.00541	.04920	-.00828	-.01508	-.00286	.03413	.03238	.01329	-.01216	.00003	.02022	.01333
-.580	.00305	.03608	-.00784	-.01451	-.00479	.02157	.02375	.00958	-.01166	.00032	.01209	.00990
-.600	.00142	.02406	-.00742	-.01397	-.00599	.01009	.01584	.00628	-.01117	.00058	.00467	.00686
-.620	.00044	.01309	-.00702	-.01344	-.00657	-.00035	.00863	.00336	-.01069	.00082	-.00206	.00417
-.640	.00003	.00314	-.00663	-.01292	-.00661	-.00978	.00208	.00079	-.01022	.00103	-.00814	.00183
-.660	.00010	-.00583	-.00627	-.01242	-.00617	-.01825	-.00386	-.00145	-.00976	.00123	-.01362	-.00022
-.680	.00058	-.01387	-.00592	-.01194	-.00534	-.02581	-.00921	-.00339	-.00932	.00140	-.01853	-.00199
-.700	.00142	-.02102	-.00559	-.01147	-.00417	-.03250	-.01401	-.00506	-.00889	.00156	-.02290	-.00350
-.720	.00254	-.02734	-.00527	-.01102	-.00274	-.03836	-.01830	-.00648	-.00847	.00170	-.02677	-.00478
-.740	.00389	-.03288	-.00497	-.01058	-.00108	-.04346	-.02212	-.00768	-.00806	.00183	-.03018	-.00585
-.760	.00542	-.03767	-.00469	-.01016	.00074	-.04784	-.02548	-.00867	-.00767	.00194	-.03315	-.00674
-.780	.00710	-.04178	-.00442	-.00975	.00268	-.05154	-.02843	-.00948	-.00729	.00203	-.03572	-.00745
-.800	.00887	-.04525	-.00416	-.00936	.00471	-.05461	-.03099	-.01012	-.00693	.00211	-.03792	-.00801
-.820	.01070	-.04813	-.00391	-.00898	.00679	-.05710	-.03320	-.01062	-.00657	.00218	-.03978	-.00844
-.840	.01256	-.05045	-.00368	-.00861	.00888	-.05906	-.03508	-.01098	-.00623	.00224	-.04132	-.00874
-.860	.01443	-.05227	-.00346	-.00826	.01096	-.06053	-.03666	-.01123	-.00590	.00228	-.04257	-.00895
-.880	.01627	-.05363	-.00325	-.00791	.01302	-.06154	-.03796	-.01137	-.00559	.00232	-.04355	-.00905
-.900	.01807	-.05457	-.00306	-.00758	.01502	-.06215	-.03901	-.01142	-.00528	.00235	-.04429	-.00908
-.920	.01981	-.05512	-.00287	-.00727	.01694	-.06239	-.03982	-.01140	-.00499	.00237	-.04481	-.00903
-.940	.02148	-.05533	-.00269	-.00696	.01879	-.06229	-.04042	-.01130	-.00471	.00238	-.04513	-.00892
-.960	.02306	-.05523	-.00252	-.00666	.02054	-.06189	-.04083	-.01114	-.00444	.00238	-.04527	-.00877
-.980	.02455	-.05485	-.00237	-.00638	.02218	-.06123	-.04106	-.01094	-.00419	.00237	-.04525	-.00856
-1.000	.02593	-.05422	-.00222	-.00611	.02372	-.06033	-.04114	-.01068	-.00394	.00236	-.04508	-.00832
-1.020	.02721	-.05338	-.00207	-.00584	.02513	-.05922	-.04107	-.01040	-.00370	.00235	-.04477	-.00805
-1.040	.02837	-.05235	-.00194	-.00559	.02643	-.05794	-.04088	-.01008	-.00348	.00232	-.04435	-.00776
-1.060	.02942	-.05115	-.00181	-.00534	.02760	-.05649	-.04057	-.00974	-.00326	.00230	-.04383	-.00744
-1.080	.03034	-.04981	-.00170	-.00511	.02865	-.05492	-.04016	-.00938	-.00306	.00227	-.04322	-.00712
-1.100	.03116	-.04836	-.00158	-.00488	.02958	-.05324	-.03967	-.00901	-.00286	.00223	-.04253	-.00678
-1.120	.03186	-.04680	-.00148	-.00466	.03038	-.05146	-.03909	-.00863	-.00267	.00219	-.04176	-.00643
-1.140	.03244	-.04516	-.00138	-.00445	.03106	-.04961	-.03845	-.00824	-.00249	.00215	-.04094	-.00608
-1.160	.03292	-.04346	-.00128	-.00425	.03163	-.04771	-.03775	-.00784	-.00233	.00211	-.04007	-.00573
-1.180	.03328	-.04172	-.00119	-.00406	.03209	-.04577	-.03699	-.00745	-.00216	.00206	-.03916	-.00539
-1.200	.03355	-.03994	-.00111	-.00387	.03244	-.04380	-.03620	-.00706	-.00201	.00201	-.03821	-.00504
-1.220	.03371	-.03813	-.00103	-.00369	.03268	-.04182	-.03537	-.00667	-.00187	.00196	-.03724	-.00471
-1.240	.03378	-.03632	-.00096	-.00352	.03283	-.03984	-.03451	-.00629	-.00173	.00191	-.03624	-.00438
-1.260	.03377	-.03451	-.00089	-.00335	.03288	-.03786	-.03363	-.00591	-.00160	.00186	-.03523	-.00405
-1.280	.03367	-.03271	-.00083	-.00319	.03284	-.03591	-.03273	-.00555	-.00148	.00180	-.03420	-.00374
-1.300	.03348	-.03093	-.00077	-.00304	.03272	-.03397	-.03181	-.00519	-.00136	.00175	-.03317	-.00344
-1.320	.03323	-.02918	-.00071	-.00289	.03252	-.03207	-.03089	-.00485	-.00125	.00169	-.03214	-.00315
-1.340	.03291	-.02746	-.00066	-.00275	.03225	-.03021	-.02997	-.00451	-.00115	.00164	-.03111	-.00287
-1.360	.03252	-.02577	-.00061	-.00262	.03192	-.02838	-.02904	-.00419	-.00105	.00158	-.03009	-.00261
-1.380	.03208	-.02412	-.00056	-.00249	.03152	-.02661	-.02811	-.00388	-.00096	.00153	-.02907	-.00235
-1.400	.03158	-.02253	-.00052	-.00236	.03107	-.02489	-.02720	-.00358	-.00087	.00147	-.02807	-.00211
-1.420	.03104	-.02098	-.00047	-.00224	.03057	-.02322	-.02628	-.00330	-.00079	.00141	-.02708	-.00188
-1.440	.03046	-.01948	-.00044	-.00213	.03002	-.02161	-.02538	-.00303	-.00072	.00136	-.02610	-.00167
-1.460	.02983	-.01804	-.00040	-.00202	.02943	-.02005	-.02449	-.00277	-.00065	.00130	-.02514	-.00146
-1.480	.02918	-.01665	-.00037	-.00191	.02881	-.01856	-.02362	-.00252	-.00058	.00125	-.02420	-.00127
-1.500	.02849	-.01532	-.00034	-.00181	.02815	-.01713	-.02276	-.00229	-.00052	.00120	-.02328	-.00109
-1.520	.02778	-.01404	-.00031	-.00172	.02747	-.01576	-.02192	-.00207	-.00046	.00114	-.02238	-.00092
-1.540	.02705	-.01283	-.00028	-.00163	.02677	-.01445	-.02109	-.00186	-.00041	.00109	-.02150	-.00076
-1.560	.02631	-.01167	-.00026	-.00154	.02605	-.01321	-.02028	-.00166	-.00036	.00104	-.02064	-.00062
-1.580	.02555	-.01057	-.00024	-.00145	.02531	-.01202	-.01949	-.00148	-.00031	.00099	-.01981	-.00048
-1.600	.02478	-.00952	-.00022	-.00137	.02456	-.01090	-.01872	-.00130	-.00027	.00094	-.01900	-.00036
-1.620	.02400	-.00854	-.00020	-.00130	.02380	-.00983	-.01798	-.00114	-.00023	.00090	-.01821	-.00024
-1.640	.02322	-.00760	-.00018	-.00122	.02304	-.00882	-.01725	-.00099	-.00020	.00085	-.01745	-.00013
-1.660	.02244	-.00672	-.00016	-.00115	.02227	-.00788	-.01654	-.00084	-.00016	.00081	-.01671	-.00004
-1.680	.02166	-.00590	-.00015	-.00108	.02151	-.00698	-.01586	-.00071	-.00013	.00076	-.01599	.00005
-1.700	.02088	-.00512	-.00014	-.00102	.02074	-.00614	-.01519	-.00059	-.00011	.00072	-.01530	.00013
-1.720	.02011	-.00440	-.00012	-.00096	.01999	-.00536	-.01455	-.00047	-.00008	.00068	-.01463	.00021
-1.740	.01934	-.00372	-.00011	-.00090	.01923	-.00462	-.01393	-.00037	-.00006	.00064	-.01398	.00027
-1.760	.01859	-.00309	-.00010	-.00085	.01849	-.00394	-.01332	-.00027	-.00004	.00060	-.01336	.00033
-1.780	.01785	-.00251	-.00009	-.00079	.01775	-.00330	-.01274	-.00018	-.00002	.00056	-.01276	.00039
-1.800	.01711	-.00197	-.00008	-.00074	.01703	-.00271	-.01218	-.00010	-.00000	.00053	-.01219	.00043
-1.820	.01640	-.00146	-.00008	-.00069	.01632	-.00216	-.01164	-.00002	.00001	.00049	-.01163	.00047
-1.840	.01569	-.00100	-.00007	-.00065	.01562	-.00165	-.01112	.00005	.00002	.00046	-.01110	.00051
-1.860	.01500	-.00058	-.00006	-.00060	.01494	-.00118	-.01062	.00011	.00003	.00043	-.01058	.00054
-1.880	.01433	-.00019	-.00006	-.00056	.01427	-.00075	-.01013	.00017	.00004	.00040	-.01009	.00057
-1.900	.01368	.00016	-.00005	-.00052	.01362	-.00036	-.00967	.00022	.00005	.00037	-.00962	.00059
-1.920	.01304	.00049	-.00005	-.00049	.01299	-.00000	-.00922	.00027	.00006	.00034	-.00917	.00061
-1.940	.01242	.00078	-.00005	-.00045	.01237	.00033	-.00879	.00031	.00006	.00031	-.00873	.00062
-1.960	.01182	.00104	-.00004	-.00042	.01178	.00062	-.00838	.00035	.00007	.00029	-.00831	.00064
-1.980	.01124	.00127	-.00004	-.00039	.01120	.00089	-.00799	.00038	.00007	.00026	-.00792	.00064
-2.000	.01067	.00148	-.00004	-.00035	.01064	.00113	-.00761	.00041	.00007	.00024	-.00753	.00065

xxxxx PI- P —> PI0 N PLAB = 6.00 TMIN = .0000
KINEMATICS 0 ELAB = 6.00, S = 12.16, W = 3.49, K = 1.61, E1 = 1.62, E2 = 1.87, E3 = 1.62, E4 = 1.87, Q = 1.61

T	DS/DT	P	R	A
-.000000	.335360	.000137	-.001152	.999999
-.020000	.383560	.141563	-.988583	.051343
-.040000	.408729	.156358	-.887693	-.433075
-.060000	.415221	.155851	-.697871	-.699061
-.080000	.407497	.150703	-.506258	-.849112
-.100000	.389414	.143965	-.331532	-.932395
-.120000	.364247	.136687	-.176324	-.974796
-.140000	.334682	.129231	-.038970	-.990849
-.160000	.302853	.121681	.083167	-.989079
-.180000	.270402	.114005	.192690	-.974615
-.200000	.238547	.106109	.291875	-.950552
-.220000	.208155	.097867	.382621	-.918707
-.240000	.179805	.089124	.466459	-.880041
-.260000	.153850	.079709	.544586	-.834909
-.280000	.130463	.069420	.617880	-.783202
-.300000	.109686	.058035	.686900	-.724431
-.320000	.091464	.045300	.751854	-.657771
-.340000	.075674	.030932	.812538	-.582087
-.360000	.062148	.014626	.868220	-.495964
-.380000	.050691	-.003936	.917460	-.397762
-.400000	.041095	-.025050	.957982	-.285732
-.420000	.033153	-.048926	.986185	-.158260
-.440000	.026659	-.075587	.997036	-.014318
-.460000	.021419	-.104691	.983764	.145771
-.480000	.017253	-.135287	.937994	.319164
-.500000	.013996	-.165535	.850635	.499017
-.520000	.011498	-.192504	.714010	.673151
-.540000	.009628	-.212294	.525399	.823946
-.560000	.008270	-.220745	.291075	.930885
-.580000	.007323	-.214750	.028336	.976258
-.600000	.006701	-.193604	-.237168	.951982
-.620000	.006331	-.159509	-.478811	.863306
-.640000	.006149	-.116770	-.677063	.726601
-.660000	.006106	-.070233	-.823560	.562865
-.680000	.006159	-.023941	-.919973	.391250
-.700000	.006274	.019456	-.974032	.225574
-.720000	.006424	.058631	-.995542	.073879
-.740000	.006588	.093216	-.993816	-.060342
-.760000	.006750	.123409	-.976526	-.176543
-.780000	.006897	.149683	-.949489	-.275801
-.800000	.007021	.172598	-.916879	-.359921
-.820000	.007117	.192707	-.881580	-.430906
-.840000	.007181	.210508	-.845523	-.490690
-.860000	.007211	.226428	-.809965	-.541005
-.880000	.007208	.240826	-.775696	-.583351
-.900000	.007172	.253996	-.743190	-.618995
-.920000	.007105	.266179	-.712711	-.648992
-.940000	.007009	.277573	-.684385	-.674219
-.960000	.006888	.288336	-.658246	-.695396
-.980000	.006743	.298597	-.634274	-.713117
-1.000000	.006579	.308461	-.612415	-.727873
-1.020000	.006397	.318013	-.592594	-.740067
-1.040000	.006202	.327323	-.574727	-.750032
-1.060000	.005995	.336446	-.558728	-.758042
-1.080000	.005779	.345427	-.544510	-.764323
-1.100000	.005558	.354301	-.531988	-.769064
-1.120000	.005332	.363096	-.521086	-.772419
-1.140000	.005105	.371834	-.511728	-.774515
-1.160000	.004877	.380529	-.503847	-.775458
-1.180000	.004651	.389194	-.497380	-.775333
-1.200000	.004428	.397832	-.492269	-.774210
-1.220000	.004209	.406446	-.488462	-.772144
-1.240000	.003995	.415035	-.485911	-.769179
-1.260000	.003787	.423591	-.484571	-.765351
-1.280000	.003585	.432106	-.484401	-.760684
-1.300000	.003391	.440567	-.485363	-.755198
-1.320000	.003203	.448958	-.487422	-.748904
-1.340000	.003024	.457259	-.490544	-.741810
-1.360000	.002852	.465447	-.494696	-.733918
-1.380000	.002689	.473498	-.499846	-.725227
-1.400000	.002533	.481382	-.505962	-.715733
-1.420000	.002386	.489066	-.513014	-.705430
-1.440000	.002246	.496516	-.520968	-.694309
-1.460000	.002114	.503692	-.529791	-.682361
-1.480000	.001989	.510555	-.539446	-.669576
-1.500000	.001872	.517059	-.549896	-.655945
-1.520000	.001761	.523160	-.561102	-.641458
-1.540000	.001658	.528807	-.573019	-.626109
-1.560000	.001561	.533952	-.585600	-.609891
-1.580000	.001470	.538543	-.598797	-.592802
-1.600000	.001385	.542527	-.612554	-.574841
-1.620000	.001306	.545851	-.626814	-.556013
-1.640000	.001232	.548464	-.641514	-.536327
-1.660000	.001163	.550313	-.656590	-.515796
-1.680000	.001099	.551350	-.671970	-.494438
-1.700000	.001039	.551528	-.687582	-.472279
-1.720000	.000984	.550803	-.703350	-.449349
-1.740000	.000932	.549138	-.719193	-.425686
-1.760000	.000885	.546499	-.735032	-.401332
-1.780000	.000840	.542858	-.750783	-.376338
-1.800000	.000799	.538196	-.766363	-.350761
-1.820000	.000762	.532499	-.781690	-.324662
-1.840000	.000727	.525764	-.796683	-.298109
-1.860000	.000694	.517995	-.811262	-.271174
-1.880000	.000664	.509204	-.825353	-.243934
-1.900000	.000637	.499415	-.838884	-.216470
-1.920000	.000612	.488658	-.851789	-.188862
-1.940000	.000588	.476973	-.864010	-.161194
-1.960000	.000567	.464409	-.875493	-.133550
-1.980000	.000547	.451022	-.886194	-.106012
-2.000000	.000529	.436876	-.896076	-.078662

CROSS SECTION = .104085

***** PI- P —> PI0 N PLAB = 6.00 TMIN = .0000 *****

FITS TO EXPERIMENTAL DATA

AMPLITUDE ANALYSIS - DATA TAKEN FROM AMBATS,I. ET AL., PHYS. REV. D9 (1974) 1179. CHI SQUARED = 199.96289

PERPENDICULAR COMPONENT OF HELICITY NONFLIP T CHANNEL I=1 CHI SQUARED = 5.20808

T VALUES	0.00000	-.05000	-.15000	-.25000	-.35000	-.45000	-.55000
THEORETICAL	.37203	.21875	.04899	-.02332	-.05113	-.05889	-.05790
EXPERIMENTAL	.38000	.19600	.07100	-.02900	-.04400	-.02600	-.01500
EXPT. ERRORS	.08000	.07700	.04800	.03100	.03400	.02400	.02500
CHI SQUAREDS	.00992	.08729	.21031	.03352	.04399	1.87816	2.94489

PARALLEL COMPONENT OF HELICITY NONFLIP T-CHANNEL I=1 CHI SQUARED = 2.66552

T VALUES	0.00000	-.05000	-.15000	-.25000	-.35000	-.45000	-.55000
THEORETICAL	.17109	.08325	-.00121	-.02648	-.02882	-.02333	-.01609
EXPERIMENTAL	.20000	.08500	.00500	-.04400	-.04100	-.03600	-.03600
EXPT. ERRORS	.06000	.02800	.02400	.02000	.01800	.02600	.02100
CHI SQUAREDS	.23214	.00390	.06686	.76780	.45810	.23741	.89931

PERPENDICULAR COMPONENT OF HELICITY FLIP T-CHANNEL I=1 CHI SQUARED = 190.77999

T VALUES	0.00000	-.05000	-.15000	-.25000	-.35000	-.45000	-.55000
THEORETICAL	0.00000	.33412	.34461	.25228	.15627	.07932	.02457
EXPERIMENTAL	0.00000	.34500	.30300	.18900	.10600	.04600	.01500
EXPT. ERRORS	*********	.06200	.01100	.00700	.00600	.00700	.00700
CHI SQUAREDS	0.00000	.03078	14.30808	81.72295	70.19825	22.65246	1.86748

PARALLEL COMPONENT OF HELICITY FLIP T-CHANNEL I=1 CHI SQUARED = 1.30931

T VALUES	0.00000	-.05000	-.15000	-.25000	-.35000	-.45000	-.55000
THEORETICAL	0.00000	.20146	.19574	.13552	.08034	.04054	.01520
EXPERIMENTAL	0.00000	.22000	.19000	.12300	.06500	.04800	.03000
EXPT. ERRORS	*********	.11000	.02900	.02600	.03100	.01600	.02000
CHI SQUAREDS	0.00000	.02840	.03912	.23199	.24485	.21739	.54756

POLARIZATION - DATA TAKEN FROM HILL,D. ET AL., PHYS. REV. LETTS. 30 (1973) 239. CHI SQUARED = 240.82869

T VALUES	-.15000	-.25000	-.35000	-.45000	-.55000	-.65000	-.75000	-.85000	-.95000	-1.05000	-1.15000	-1.25000	-1.35000	-1.45000	-1.65000
THEORETICAL	.12547	.08451	.02304	-.08988	-.21817	-.09369	.10884	.21868	.28302	.33191	.37619	.41932	.46137	.50014	.54948
EXPERIMENTAL	.13000	.20000	.13000	.15000	.17000	.02000	-.07000	-.05000	0.00000	-.03000	.05000	.08000	0.00000	-.07000	.14000
EXPT. ERRORS	.07000	.06000	.05000	.12000	.11000	.07000	.07000	.07000	.05000	.05000	.08000	.07000	.11000	.09000	.13000
CHI SQUAREDS	.00419	3.70482	4.57606	3.99585	12.45280	2.63804	6.52697	14.73236	32.04112	52.39012	16.62459	23.49721	17.59182	40.13089	9.92186

POLARIZATION - DATA TAKEN FROM DROBNIS,D.D. ET AL., PHYS. REV. LETTS. 20 (1968) 274. CHI SQUARED = 6.64186

T VALUES	-.07100	-.12800	-.20200	-.29400	-.40500
THEORETICAL	.15333	.13372	.10530	.06158	-.03075
EXPERIMENTAL	0.00000	.08000	.19000	.05000	.22000
EXPT. ERRORS	.10000	.09000	.10000	.12000	.14000
CHI SQUAREDS	2.35089	.35624	.71736	.00931	3.20805

POLARIZATION - DATA TAKEN FROM BONAMY,P. ET AL., NUCL. PHYS. B16 (1970) 335. (5.9 GEV/C) CHI SQUARED = 3.98990

T VALUES	-.03100	-.06000	-.09000	-.12000	-.16500	-.22500
THEORETICAL	.15293	.15585	.14744	.13669	.11978	.09573
EXPERIMENTAL	.11400	.19800	.18400	.13700	.18000	.08000
EXPT. ERRORS	.04500	.04700	.04600	.04800	.04500	.13000
CHI SQUAREDS	.74838	.80421	.63159	.00004	1.79102	.01465

POLARIZATION - DATA TAKEN FROM BONAMY,P. ET AL., NUCL. PHYS. B52 (1973) 392. (4.9 GEV/C) CHI SQUARED = 52.97886

T VALUES	-.15000	-.25000	-.35000	-.50000	-.75000	-1.05000	-1.35000	-1.75000
THEORETICAL	.12547	.08451	.02304	-.16554	.10884	.33191	.46137	.54794
EXPERIMENTAL	.27000	.37000	.44000	.74000	.24000	0.00000	.10000	-.45000
EXPT. ERRORS	.12000	.11000	.15000	.25000	.13000	.12000	.14000	.34000
CHI SQUAREDS	1.45066	6.73579	7.72687	13.11990	1.01799	7.65007	6.66262	8.61495

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM STIRLING,A.V. ET AL., PHYS. REV. LETTS. 14 (1965) 763. CHISQ = 583.87996

T VALUES	-.01000	-.03000	-.05000	-.07000	-.09000	-.12000	-.16000	-.21000	-.28000	-.36000	-.45000	-.55000	-.65000	-.80000
THEORETICAL	.36271	.39880	.41401	.41288	.39953	.36425	.30285	.22313	.13046	.06215	.02389	.00889	.00611	.00702
EXPERIMENTAL	.37400	.43000	.41100	.41200	.39700	.33200	.25200	.16400	.08500	.03200	.01240	.00570	.00610	.00880
EXPT. ERRORS	.01300	.01300	.01300	.01300	.01300	.00900	.00800	.00600	.00400	.00200	.00150	.00100	.00100	.00140
CHI SQUAREDS	.75463	5.75856	.05377	.00460	.03792	12.83800	40.40704	87.10682	********	********	58.71790	10.18742	.00017	1.61381

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM SONDEREGGER,P. ET AL., PHYS. LETTS. 20 (1966) 75. CHISQ = 216.40127

T VALUES	-.02500	-.07500	-.12500	-.17500	-.22500	-.27500	-.35000	-.45000	-.60000	-.80000	-1.00000	-1.20000	-1.40000	-1.60000	-1.85000
THEORETICAL	.39192	.41054	.35718	.27850	.20086	.13606	.06864	.02389	.00670	.00702	.00658	.00443	.00253	.00139	.00071
EXPERIMENTAL	.40400	.39600	.33700	.22000	.14200	.08700	.04100	.01300	.00850	.00860	.01100	.01000	.00600	.00290	.00150
EXPT. ERRORS	.02000	.02000	.01500	.01500	.01000	.00800	.00400	.00200	.00100	.00100	.00150	.00150	.00100	.00070	.00040
CHI SQUAREDS	.36475	.52855	1.80918	15.20981	34.64359	37.61443	47.74686	29.67058	3.23514	2.49167	8.58805	13.79720	12.01831	4.68360	3.89953

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM WAHLIG,M.A. AND MANNELLI,I., PHYS. REV. 168 (1968) 1515. CHISQ = 29.49369

T VALUES	-.02000	-.06000	-.11000	-.17000	-.24000	-.33000	-.44000	-.56000	-.69000	-.83000
THEORETICAL	.38366	.41522	.37753	.28662	.17981	.08327	.02666	.00827	.00621	.00715
EXPERIMENTAL	.38200	.40200	.25200	.19400	.12400	.04000	.01700	.00200	.01000	.01000
EXPT. ERRORS	.06400	.05900	.04600	.03900	.02600	.01600	.00800	.00400	.00700	.00600
CHI SQUAREDS	.00067	.05022	7.44751	5.64001	4.60687	7.31530	1.45781	2.45717	.29302	.22511

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM MANNELLI,I. ET AL., PHYS. REV. LETTS. 14 (1965) 408. CHISQ = 58.61084

T VALUES	-.02140	-.06250	-.10000	-.14110	-.18040	-.22140	-.26250	-.30000	-.33930	-.37860
THEORETICAL	.38612	.41495	.38941	.33297	.26976	.20610	.15078	.10969	.07619	.05143
EXPERIMENTAL	.34010	.34440	.36650	.23140	.16340	.15940	.09570	.02320	.06350	.08250
EXPT. ERRORS	.03090	.04080	.03330	.02740	.02160	.02330	.02700	.03430	.03100	.06360
CHI SQUAREDS	2.21771	2.98992	.47349	13.74232	24.24434	4.01696	4.16219	6.35775	.16750	.23866

***** PI- P —> PIO N PLAB = 20.80 TMIN = .0000
KINEMATICS 0 ELAB = 20.80, S = 39.92, W = 6.32, K = 3.09, E1 = 3.09, E2 = 3.23, E3 = 3.09, E4 = 3.23, Q = 3.09

***** NONFLIP AMPLITUDES AT A SERIES OF VALUES OF T *****

T	PHI++ (POLE) REAL	PHI++ (POLE) IMAG	PHI++ (CUT) REAL	PHI++ (CUT) IMAG	PHI++ REAL	PHI++ IMAG	FPER++ P	FPAR++ P	FPER++ C	FPAR++ C	FPER++	FPAR++
-.000	.33373	.31340	-.06372	-.10486	.27001	.20854	.27393	.17251	-.05838	-.06418	.21556	.10832
-.020	.27231	.26897	-.06016	-.10091	.21215	.16807	.22990	.14281	-.05729	-.06016	.17261	.08265
-.040	.22191	.23055	-.05678	-.09711	.16512	.13344	.19294	.11821	-.05617	-.05633	.13677	.06188
-.060	.18059	.19737	-.05359	-.09346	.12701	.10391	.16191	.09783	-.05501	-.05270	.10690	.04513
-.080	.14677	.16877	-.05056	-.08995	.09621	.07882	.13586	.08095	-.05383	-.04926	.08203	.03170
-.100	.11910	.14415	-.04769	-.08657	.07141	.05758	.11400	.06698	-.05263	-.04599	.06137	.02099
-.120	.09650	.12299	-.04497	-.08333	.05152	.03967	.09565	.05541	-.05141	-.04290	.04424	.01251
-.140	.07805	.10483	-.04240	-.08020	.03565	.02463	.08025	.04583	-.05018	-.03997	.03007	.00586
-.160	.06302	.08926	-.03996	-.07720	.02306	.01206	.06733	.03790	-.04894	-.03719	.01839	.00071
-.180	.05078	.07593	-.03765	-.07431	.01313	.00162	.05648	.03134	-.04770	-.03457	.00878	-.00322
-.200	.04084	.06453	-.03546	-.07153	.00538	-.00700	.04738	.02591	-.04645	-.03208	.00093	-.00617
-.220	.03277	.05480	-.03339	-.06886	-.00062	-.01406	.03974	.02142	-.04521	-.02973	-.00547	-.00832
-.240	.02623	.04649	-.03143	-.06629	-.00520	-.01980	.03334	.01770	-.04398	-.02751	-.01064	-.00981
-.260	.02094	.03941	-.02957	-.06382	-.00863	-.02441	.02796	.01463	-.04275	-.02542	-.01479	-.01079
-.280	.01667	.03338	-.02781	-.06144	-.01114	-.02806	.02345	.01208	-.04153	-.02344	-.01808	-.01136
-.300	.01323	.02825	-.02615	-.05915	-.01292	-.03090	.01967	.00998	-.04032	-.02158	-.02065	-.01159
-.320	.01046	.02389	-.02457	-.05695	-.01411	-.03306	.01649	.00824	-.03913	-.01982	-.02263	-.01157
-.340	.00824	.02019	-.02308	-.05484	-.01484	-.03465	.01383	.00681	-.03795	-.01816	-.02412	-.01135
-.360	.00646	.01705	-.02167	-.05280	-.01521	-.03576	.01160	.00562	-.03679	-.01660	-.02519	-.01098
-.380	.00504	.01438	-.02033	-.05084	-.01530	-.03646	.00973	.00464	-.03564	-.01513	-.02592	-.01049
-.400	.00391	.01213	-.01907	-.04896	-.01516	-.03683	.00816	.00383	-.03452	-.01375	-.02636	-.00992
-.420	.00301	.01022	-.01787	-.04715	-.01486	-.03693	.00684	.00316	-.03341	-.01245	-.02657	-.00929
-.440	.00230	.00860	-.01674	-.04541	-.01444	-.03680	.00573	.00261	-.03232	-.01123	-.02659	-.00863
-.460	.00174	.00724	-.01567	-.04373	-.01393	-.03649	.00481	.00215	-.03126	-.01009	-.02645	-.00794
-.480	.00130	.00609	-.01466	-.04212	-.01336	-.03603	.00403	.00177	-.03022	-.00902	-.02619	-.00724
-.500	.00096	.00511	-.01370	-.04057	-.01274	-.03545	.00338	.00146	-.02920	-.00801	-.02582	-.00655
-.520	.00069	.00429	-.01279	-.03907	-.01210	-.03478	.00283	.00120	-.02820	-.00707	-.02537	-.00586
-.540	.00049	.00360	-.01194	-.03764	-.01145	-.03403	.00237	.00099	-.02723	-.00619	-.02485	-.00520
-.560	.00033	.00302	-.01113	-.03626	-.01079	-.03323	.00199	.00082	-.02628	-.00536	-.02429	-.00455
-.580	.00021	.00253	-.01036	-.03493	-.01015	-.03239	.00167	.00067	-.02535	-.00460	-.02368	-.00392
-.600	.00013	.00212	-.00964	-.03365	-.00951	-.03153	.00140	.00055	-.02444	-.00388	-.02305	-.00332
-.620	.00006	.00178	-.00895	-.03242	-.00889	-.03064	.00117	.00046	-.02356	-.00321	-.02239	-.00275
-.640	.00001	.00149	-.00831	-.03123	-.00830	-.02975	.00098	.00037	-.02271	-.00259	-.02173	-.00221
-.660	-.00002	.00124	-.00770	-.03009	-.00772	-.02885	.00082	.00031	-.02187	-.00201	-.02105	-.00170
-.680	-.00004	.00104	-.00712	-.02900	-.00717	-.02796	.00069	.00025	-.02106	-.00147	-.02037	-.00122
-.700	-.00006	.00087	-.00658	-.02794	-.00664	-.02708	.00058	.00021	-.02028	-.00097	-.01970	-.00077
-.720	-.00007	.00072	-.00607	-.02693	-.00613	-.02620	.00048	.00017	-.01951	-.00051	-.01903	-.00034
-.740	-.00007	.00060	-.00558	-.02595	-.00565	-.02535	.00041	.00014	-.01877	-.00009	-.01836	.00005
-.760	-.00007	.00050	-.00512	-.02501	-.00520	-.02451	.00034	.00012	-.01805	.00031	-.01771	.00042
-.780	-.00007	.00042	-.00469	-.02410	-.00476	-.02369	.00028	.00009	-.01735	.00067	-.01707	.00077
-.800	-.00007	.00035	-.00428	-.02323	-.00435	-.02288	.00024	.00008	-.01667	.00100	-.01644	.00108
-.820	-.00006	.00029	-.00390	-.02239	-.00396	-.02210	.00020	.00006	-.01602	.00131	-.01582	.00138
-.840	-.00006	.00024	-.00354	-.02159	-.00360	-.02135	.00017	.00005	-.01539	.00159	-.01522	.00164
-.860	-.00006	.00020	-.00320	-.02081	-.00325	-.02061	.00014	.00004	-.01477	.00185	-.01463	.00189
-.880	-.00005	.00017	-.00288	-.02006	-.00293	-.01989	.00012	.00004	-.01418	.00208	-.01406	.00212
-.900	-.00005	.00014	-.00257	-.01934	-.00262	-.01920	.00010	.00003	-.01360	.00230	-.01351	.00232
-.920	-.00004	.00011	-.00229	-.01865	-.00233	-.01853	.00008	.00002	-.01305	.00249	-.01297	.00251
-.940	-.00004	.00009	-.00202	-.01798	-.00206	-.01788	.00007	.00002	-.01251	.00266	-.01244	.00268
-.960	-.00003	.00008	-.00177	-.01733	-.00180	-.01726	.00006	.00002	-.01199	.00282	-.01194	.00283
-.980	-.00003	.00006	-.00153	-.01672	-.00156	-.01665	.00005	.00001	-.01149	.00296	-.01145	.00297
-1.000	-.00003	.00005	-.00131	-.01612	-.00133	-.01607	.00004	.00001	-.01101	.00308	-.01097	.00309
-1.020	-.00002	.00004	-.00110	-.01554	-.00112	-.01550	.00003	.00001	-.01055	.00319	-.01051	.00320
-1.040	-.00002	.00004	-.00090	-.01499	-.00092	-.01495	.00003	.00001	-.01010	.00329	-.01007	.00329
-1.060	-.00002	.00003	-.00071	-.01446	-.00073	-.01443	.00002	.00001	-.00967	.00337	-.00964	.00338
-1.080	-.00002	.00002	-.00054	-.01394	-.00055	-.01392	.00002	.00000	-.00925	.00344	-.00923	.00345
-1.100	-.00001	.00002	-.00038	-.01345	-.00039	-.01343	.00002	.00000	-.00885	.00350	-.00883	.00351
-1.120	-.00001	.00002	-.00022	-.01297	-.00024	-.01296	.00001	.00000	-.00846	.00355	-.00845	.00356
-1.140	-.00001	.00001	-.00008	-.01251	-.00009	-.01250	.00001	.00000	-.00809	.00359	-.00807	.00360
-1.160	-.00001	.00001	.00005	-.01207	.00005	-.01206	.00001	.00000	-.00773	.00363	-.00772	.00363
-1.180	-.00001	.00001	.00018	-.01165	.00017	-.01164	.00001	.00000	-.00738	.00365	-.00737	.00365
-1.200	-.00001	.00001	.00030	-.01124	.00029	-.01123	.00001	.00000	-.00705	.00367	-.00704	.00367
-1.220	-.00001	.00001	.00041	-.01084	.00040	-.01083	.00001	.00000	-.00673	.00368	-.00673	.00368
-1.240	-.00000	.00001	.00051	-.01046	.00050	-.01045	.00000	.00000	-.00642	.00368	-.00642	.00368
-1.260	-.00000	.00000	.00060	-.01009	.00060	-.01009	.00000	.00000	-.00613	.00368	-.00613	.00368
-1.280	-.00000	.00000	.00069	-.00974	.00069	-.00973	.00000	.00000	-.00585	.00367	-.00584	.00367
-1.300	-.00000	.00000	.00078	-.00940	.00077	-.00939	.00000	.00000	-.00557	.00366	-.00557	.00366
-1.320	-.00000	.00000	.00085	-.00907	.00085	-.00906	.00000	.00000	-.00531	.00364	-.00531	.00364
-1.340	-.00000	.00000	.00093	-.00875	.00092	-.00875	.00000	.00000	-.00506	.00362	-.00506	.00362
-1.360	-.00000	.00000	.00099	-.00844	.00099	-.00844	.00000	.00000	-.00482	.00359	-.00482	.00359
-1.380	-.00000	.00000	.00105	-.00815	.00105	-.00815	.00000	.00000	-.00459	.00356	-.00459	.00356
-1.400	-.00000	.00000	.00111	-.00786	.00111	-.00786	.00000	.00000	-.00437	.00353	-.00437	.00353
-1.420	-.00000	.00000	.00116	-.00759	.00116	-.00759	.00000	.00000	-.00415	.00350	-.00415	.00350
-1.440	-.00000	.00000	.00121	-.00732	.00121	-.00732	.00000	.00000	-.00395	.00346	-.00395	.00346
-1.460	-.00000	.00000	.00126	-.00707	.00126	-.00707	.00000	.00000	-.00375	.00342	-.00375	.00342
-1.480	-.00000	.00000	.00130	-.00682	.00130	-.00682	.00000	.00000	-.00357	.00338	-.00357	.00338
-1.500	-.00000	.00000	.00134	-.00658	.00134	-.00658	.00000	.00000	-.00339	.00333	-.00339	.00333
-1.520	-.00000	.00000	.00137	-.00636	.00137	-.00636	.00000	.00000	-.00322	.00329	-.00321	.00329
-1.540	-.00000	.00000	.00140	-.00613	.00140	-.00613	.00000	.00000	-.00305	.00324	-.00305	.00324
-1.560	-.00000	.00000	.00143	-.00592	.00143	-.00592	.00000	.00000	-.00289	.00319	-.00289	.00319
-1.580	-.00000	.00000	.00146	-.00571	.00146	-.00571	.00000	.00000	-.00274	.00314	-.00274	.00314
-1.600	-.00000	.00000	.00148	-.00552	.00148	-.00552	.00000	.00000	-.00260	.00309	-.00260	.00309
-1.620	-.00000	.00000	.00150	-.00532	.00150	-.00532	.00000	.00000	-.00246	.00304	-.00246	.00304
-1.640	-.00000	.00000	.00152	-.00514	.00152	-.00514	.00000	.00000	-.00233	.00299	-.00233	.00299
-1.660	-.00000	.00000	.00154	-.00496	.00154	-.00496	.00000	.00000	-.00220	.00294	-.00220	.00294
-1.680	-.00000	.00000	.00155	-.00479	.00155	-.00479	.00000	.00000	-.00208	.00289	-.00208	.00289
-1.700	-.00000	.00000	.00157	-.00462	.00156	-.00462	.00000	.00000	-.00196	.00284	-.00196	.00284
-1.720	-.00000	.00000	.00158	-.00446	.00158	-.00446	.00000	.00000	-.00185	.00278	-.00185	.00278
-1.740	-.00000	.00000	.00159	-.00430	.00159	-.00430	.00000	.00000	-.00175	.00273	-.00175	.00273
-1.760	-.00000	.00000	.00159	-.00415	.00159	-.00415	.00000	.00000	-.00165	.00268	-.00165	.00268
-1.780	-.00000	.00000	.00160	-.00401	.00160	-.00401	.00000	.00000	-.00155	.00263	-.00155	.00263
-1.800	-.00000	.00000	.00161	-.00387	.00161	-.00387	.00000	.00000	-.00146	.00258	-.00146	.00258
-1.820	-.00000	.00000	.00161	-.00373	.00161	-.00373	.00000	.00000	-.00137	.00252	-.00137	.00252
-1.840	-.00000	.00000	.00161	-.00360	.00161	-.00360	.00000	-.00000	-.00129	.00247	-.00129	.00247
-1.860	-.00000	.00000	.00161	-.00347	.00161	-.00347	.00000	-.00000	-.00121	.00242	-.00121	.00242
-1.880	-.00000	.00000	.00161	-.00335	.00161	-.00335	.00000	-.00000	-.00113	.00237	-.00113	.00237
-1.900	-.00000	-.00000	.00161	-.00323	.00161	-.00323	.00000	-.00000	-.00106	.00232	-.00106	.00232
-1.920	-.00000	-.00000	.00161	-.00312	.00161	-.00312	.00000	-.00000	-.00099	.00228	-.00099	.00228
-1.940	-.00000	-.00000	.00161	-.00301	.00161	-.00301	.00000	-.00000	-.00093	.00223	-.00093	.00223
-1.960	-.00000	-.00000	.00161	-.00290	.00161	-.00290	.00000	-.00000	-.00086	.00218	-.00086	.00218
-1.980	-.00000	-.00000	.00160	-.00280	.00160	-.00280	.00000	-.00000	-.00080	.00213	-.00080	.00213
-2.000	-.00000	-.00000	.00160	-.00270	.00160	-.00270	.00000	-.00000	-.00075	.00209	-.00075	.00209

***** PI- P —> PIO N PLAB = 20.80 TMIN = .0000
KINEMATICS 0 ELAB = 20.80, S = 39.92, W = 6.32, K = 3.09, E1 = 3.09, E2 = 3.23, E3 =° 3.09, E4 = 3.23, Q = 3.09

***** FLIP AMPLITUDES AT A SERIES OF VALUES OF T *****

T	PHI+— (POLE)		PHI+— (CUT)		PHI+—		FPER+— P	FPAR+— P	FPER+— C	FPAR+— C	FPER+—	FPAR+—
	REAL	IMAG	REAL	IMAG	REAL	IMAG						
-.000	.00014	.00013	-.00000	-.00000	.00013	.00012	.00011	.00007	-.00000	-.00000	.00011	.00007
-.020	.16793	.16588	-.00508	-.00586	.16285	.16002	.14178	.08807	-.00442	-.00325	.13736	.08483
-.040	.20538	.21338	-.00663	-.00776	.19874	.20561	.17857	.10940	-.00592	-.00413	.17264	.10527
-.060	.21699	.23715	-.00750	-.00891	.20949	.22824	.19454	.11755	-.00686	-.00454	.18767	.11300
-.080	.21560	.24792	-.00799	-.00964	.20760	.23828	.19958	.11892	-.00750	-.00471	.19208	.11421
-.100	.20685	.25035	-.00825	-.01010	.19859	.24025	.19799	.11633	-.00793	-.00472	.19006	.11161
-.120	.19387	.24711	-.00835	-.01038	.18552	.23673	.19218	.11133	-.00821	-.00462	.18397	.10671
-.140	.17862	.23990	-.00834	-.01052	.17028	.22938	.18365	.10488	-.00838	-.00445	.17527	.10043
-.160	.16233	.22992	-.00824	-.01055	.15409	.21937	.17342	.09763	-.00847	-.00424	.16496	.09339
-.180	.14584	.21806	-.00809	-.01051	.13775	.20755	.16220	.09000	-.00848	-.00400	.15372	.08600
-.200	.12971	.20496	-.00789	-.01041	.12182	.19455	.15048	.08229	-.00845	-.00373	.14203	.07856
-.220	.11430	.19112	-.00765	-.01026	.10664	.18086	.13862	.07470	-.00836	-.00346	.13026	.07124
-.240	.09984	.17694	-.00740	-.01007	.09244	.16687	.12688	.06737	-.00825	-.00318	.11864	.06419
-.260	.08646	.16271	-.00713	-.00986	.07933	.15285	.11545	.06039	-.00810	-.00290	.10735	.05749
-.280	.07425	.14866	-.00686	-.00963	.06739	.13903	.10445	.05382	-.00793	-.00263	.09652	.05119
-.300	.06320	.13496	-.00657	-.00938	.05662	.12559	.09397	.04769	-.00775	-.00236	.08622	.04533
-.320	.05331	.12176	-.00629	-.00912	.04702	.11264	.08407	.04202	-.00755	-.00211	.07652	.03991
-.340	.04453	.10913	-.00601	-.00885	.03852	.10028	.07478	.03680	-.00734	-.00186	.06745	.03494
-.360	.03681	.09716	-.00574	-.00858	.03108	.08858	.06612	.03203	-.00712	-.00162	.05900	.03041
-.380	.03008	.08589	-.00546	-.00831	.02462	.07758	.05808	.02770	-.00689	-.00140	.05119	.02630
-.400	.02427	.07534	-.00520	-.00803	.01907	.06730	.05066	.02378	-.00666	-.00119	.04400	.02259
-.420	.01929	.06552	-.00494	-.00776	.01435	.05776	.04385	.02025	-.00643	-.00099	.03741	.01927
-.440	.01508	.05643	-.00469	-.00749	.01039	.04894	.03760	.01709	-.00620	-.00080	.03140	.01629
-.460	.01155	.04807	-.00445	-.00723	.00710	.04084	.03192	.01427	-.00597	-.00062	.02595	.01364
-.480	.00864	.04041	-.00422	-.00697	.00442	.03345	.02675	.01176	-.00574	-.00046	.02101	.01130
-.500	.00627	.03344	-.00400	-.00671	.00227	.02672	.02208	.00955	-.00552	-.00031	.01656	.00924
-.520	.00438	.02711	-.00378	-.00646	.00059	.02065	.01787	.00760	-.00529	-.00017	.01258	.00743
-.540	.00290	.02140	-.00358	-.00622	-.00068	.01519	.01409	.00589	-.00507	-.00004	.00902	.00585
-.560	.00179	.01628	-.00338	-.00598	-.00159	.01030	.01071	.00440	-.00486	.00008	.00586	.00448
-.580	.00099	.01171	-.00320	-.00575	-.00221	.00597	.00771	.00311	-.00465	.00019	.00306	.00330
-.600	.00045	.00766	-.00302	-.00552	-.00257	.00214	.00505	.00200	-.00444	.00028	.00061	.00228
-.620	.00014	.00409	-.00285	-.00530	-.00271	-.00121	.00270	.00105	-.00424	.00037	-.00154	.00142
-.640	.00001	.00096	-.00269	-.00509	-.00268	-.00413	.00064	.00024	-.00404	.00045	-.00341	.00070
-.660	.00003	-.00175	-.00253	-.00488	-.00250	-.00664	-.00116	-.00044	-.00385	.00053	-.00502	.00009
-.680	.00017	-.00409	-.00238	-.00469	-.00221	-.00878	-.00272	-.00100	-.00367	.00059	-.00639	-.00041
-.700	.00041	-.00609	-.00225	-.00449	-.00184	-.01058	-.00406	-.00146	-.00349	.00065	-.00755	-.00081
-.720	.00072	-.00776	-.00211	-.00431	-.00139	-.01207	-.00520	-.00184	-.00332	.00070	-.00852	-.00114
-.740	.00108	-.00916	-.00199	-.00413	-.00090	-.01329	-.00616	-.00214	-.00315	.00075	-.00931	-.00139
-.760	.00148	-.01030	-.00187	-.00396	-.00039	-.01425	-.00696	-.00237	-.00299	.00078	-.00996	-.00159
-.780	.00190	-.01120	-.00176	-.00379	.00015	-.01499	-.00762	-.00254	-.00284	.00082	-.01046	-.00173
-.800	.00233	-.01190	-.00165	-.00363	.00068	-.01553	-.00815	-.00266	-.00269	.00084	-.01084	-.00182
-.820	.00276	-.01242	-.00155	-.00347	.00121	-.01589	-.00857	-.00274	-.00254	.00087	-.01111	-.00187
-.840	.00318	-.01277	-.00145	-.00332	.00173	-.01610	-.00888	-.00278	-.00241	.00089	-.01129	-.00190
-.860	.00358	-.01298	-.00136	-.00318	.00222	-.01616	-.00911	-.00279	-.00227	.00090	-.01138	-.00189
-.880	.00397	-.01307	-.00128	-.00304	.00269	-.01611	-.00925	-.00277	-.00215	.00091	-.01140	-.00186
-.900	.00432	-.01305	-.00119	-.00290	.00313	-.01595	-.00933	-.00273	-.00202	.00092	-.01135	-.00182
-.920	.00465	-.01293	-.00112	-.00278	.00353	-.01571	-.00934	-.00267	-.00191	.00092	-.01125	-.00175
-.940	.00494	-.01273	-.00105	-.00265	.00390	-.01538	-.00930	-.00260	-.00179	.00092	-.01110	-.00168
-.960	.00521	-.01247	-.00098	-.00253	.00423	-.01500	-.00922	-.00252	-.00169	.00092	-.01090	-.00160
-.980	.00544	-.01215	-.00091	-.00242	.00452	-.01457	-.00909	-.00242	-.00158	.00091	-.01068	-.00151
-1.000	.00564	-.01178	-.00085	-.00231	.00478	-.01409	-.00894	-.00232	-.00149	.00090	-.01043	-.00142
-1.020	.00580	-.01138	-.00080	-.00220	.00500	-.01358	-.00876	-.00222	-.00139	.00089	-.01015	-.00132
-1.040	.00593	-.01095	-.00074	-.00210	.00519	-.01305	-.00855	-.00211	-.00131	.00088	-.00985	-.00123
-1.060	.00604	-.01050	-.00069	-.00200	.00534	-.01250	-.00832	-.00200	-.00122	.00087	-.00955	-.00113
-1.080	.00611	-.01003	-.00064	-.00191	.00546	-.01194	-.00808	-.00189	-.00114	.00085	-.00922	-.00103
-1.100	.00615	-.00955	-.00060	-.00182	.00555	-.01137	-.00783	-.00178	-.00106	.00084	-.00890	-.00094
-1.120	.00617	-.00907	-.00056	-.00173	.00561	-.01080	-.00757	-.00167	-.00099	.00082	-.00857	-.00085
-1.140	.00617	-.00858	-.00052	-.00165	.00565	-.01023	-.00731	-.00157	-.00092	.00080	-.00823	-.00076
-1.160	.00614	-.00810	-.00048	-.00157	.00566	-.00968	-.00704	-.00146	-.00086	.00078	-.00790	-.00068
-1.180	.00609	-.00763	-.00045	-.00149	.00564	-.00913	-.00677	-.00136	-.00080	.00076	-.00756	-.00060
-1.200	.00602	-.00717	-.00041	-.00142	.00561	-.00859	-.00650	-.00127	-.00074	.00074	-.00723	-.00052
-1.220	.00594	-.00671	-.00038	-.00135	.00555	-.00807	-.00623	-.00117	-.00068	.00072	-.00691	-.00045
-1.240	.00584	-.00627	-.00035	-.00129	.00548	-.00756	-.00596	-.00109	-.00063	.00070	-.00659	-.00039
-1.260	.00572	-.00585	-.00033	-.00122	.00539	-.00707	-.00570	-.00100	-.00058	.00068	-.00628	-.00032
-1.280	.00560	-.00544	-.00030	-.00116	.00529	-.00660	-.00544	-.00092	-.00054	.00066	-.00598	-.00027
-1.300	.00546	-.00505	-.00028	-.00110	.00518	-.00615	-.00519	-.00085	-.00049	.00064	-.00568	-.00021
-1.320	.00532	-.00467	-.00026	-.00104	.00506	-.00571	-.00494	-.00078	-.00045	.00061	-.00539	-.00016
-1.340	.00517	-.00431	-.00024	-.00099	.00493	-.00530	-.00470	-.00071	-.00041	.00059	-.00512	-.00012
-1.360	.00501	-.00397	-.00022	-.00094	.00479	-.00491	-.00447	-.00065	-.00038	.00057	-.00485	-.00008
-1.380	.00485	-.00365	-.00020	-.00089	.00465	-.00454	-.00425	-.00059	-.00034	.00055	-.00459	-.00004
-1.400	.00468	-.00334	-.00018	-.00084	.00450	-.00418	-.00403	-.00053	-.00031	.00053	-.00434	-.00001
-1.420	.00451	-.00305	-.00017	-.00080	.00434	-.00385	-.00382	-.00048	-.00028	.00050	-.00410	.00002
-1.440	.00435	-.00278	-.00016	-.00076	.00419	-.00353	-.00362	-.00043	-.00025	.00048	-.00388	.00005
-1.460	.00418	-.00252	-.00014	-.00071	.00403	-.00324	-.00343	-.00039	-.00023	.00046	-.00366	.00007
-1.480	.00401	-.00229	-.00013	-.00068	.00388	-.00296	-.00324	-.00035	-.00020	.00044	-.00345	.00009
-1.500	.00384	-.00206	-.00012	-.00064	.00372	-.00270	-.00307	-.00031	-.00018	.00042	-.00325	.00011
-1.520	.00367	-.00186	-.00011	-.00060	.00356	-.00246	-.00290	-.00027	-.00016	.00040	-.00306	.00013
-1.540	.00351	-.00166	-.00010	-.00057	.00341	-.00223	-.00273	-.00024	-.00014	.00038	-.00288	.00014
-1.560	.00335	-.00148	-.00009	-.00054	.00326	-.00202	-.00258	-.00021	-.00013	.00036	-.00271	.00015
-1.580	.00319	-.00132	-.00008	-.00051	.00311	-.00182	-.00243	-.00018	-.00011	.00035	-.00254	.00016
-1.600	.00303	-.00117	-.00007	-.00048	.00296	-.00164	-.00229	-.00016	-.00009	.00033	-.00239	.00017
-1.620	.00288	-.00103	-.00007	-.00045	.00282	-.00147	-.00216	-.00014	-.00008	.00031	-.00224	.00017
-1.640	.00274	-.00090	-.00006	-.00042	.00268	-.00132	-.00203	-.00012	-.00007	.00029	-.00210	.00018
-1.660	.00259	-.00078	-.00006	-.00040	.00254	-.00117	-.00191	-.00010	-.00006	.00028	-.00197	.00018
-1.680	.00246	-.00067	-.00005	-.00037	.00241	-.00104	-.00180	-.00008	-.00005	.00026	-.00185	.00018
-1.700	.00232	-.00057	-.00005	-.00035	.00228	-.00092	-.00169	-.00007	-.00004	.00025	-.00173	.00018
-1.720	.00220	-.00048	-.00004	-.00033	.00215	-.00081	-.00159	-.00005	-.00003	.00023	-.00162	.00018
-1.740	.00207	-.00040	-.00004	-.00031	.00204	-.00071	-.00149	-.00004	-.00002	.00022	-.00151	.00018
-1.760	.00195	-.00033	-.00003	-.00029	.00192	-.00061	-.00140	-.00003	-.00001	.00020	-.00141	.00018
-1.780	.00184	-.00026	-.00003	-.00027	.00181	-.00053	-.00131	-.00002	-.00001	.00019	-.00132	.00017
-1.800	.00173	-.00020	-.00003	-.00025	.00170	-.00045	-.00123	-.00001	-.00000	.00018	-.00123	.00017
-1.820	.00163	-.00015	-.00002	-.00023	.00160	-.00038	-.00116	-.00000	.00000	.00017	-.00115	.00016
-1.840	.00153	-.00010	-.00002	-.00022	.00151	-.00032	-.00108	.00000	.00001	.00016	-.00108	.00016
-1.860	.00143	-.00006	-.00002	-.00020	.00141	-.00026	-.00101	.00001	.00001	.00014	-.00100	.00016
-1.880	.00134	-.00002	-.00002	-.00019	.00133	-.00021	-.00095	.00002	.00001	.00013	-.00094	.00015
-1.900	.00126	.00002	-.00002	-.00018	.00124	-.00016	-.00089	.00002	.00002	.00012	-.00087	.00014
-1.920	.00118	.00004	-.00001	-.00016	.00116	-.00012	-.00083	.00002	.00002	.00011	-.00081	.00014
-1.940	.00110	.00007	-.00001	-.00015	.00109	-.00008	-.00078	.00003	.00002	.00011	-.00076	.00013
-1.960	.00103	.00009	-.00001	-.00014	.00101	-.00005	-.00073	.00003	.00002	.00010	-.00071	.00013
-1.980	.00096	.00011	-.00001	-.00013	.00095	-.00002	-.00068	.00003	.00002	.00009	-.00066	.00012
-2.000	.00089	.00012	-.00001	-.00012	.00088	.00000	-.00064	.00003	.00002	.00008	-.00061	.00012

xxxxx PI- P —> PI0 N PLAB = 20.80 TMIN = .0000

KINEMATICS 0 ELAB = 20.80, S = 39.92, W = 6.32, K = 3.09, E1 = 3.09, E2 = 3.23, E3 = 3.09, E4 = 3.23, Q = 3.09

T	DS/DT	P	R	A
-.000000	.116397	.000099	-.001118	.999999
-.020000	.125378	.104926	-.990309	.090987
-.040000	.126845	.117173	-.912111	-.392840
-.060000	.122910	.117484	-.735311	-.667469
-.080000	.115346	.113769	-.549735	-.827555
-.100000	.105575	.108395	-.376604	-.920011
-.120000	.094687	.102198	-.220133	-.970102
-.140000	.083488	.095457	-.079601	-.992246
-.160000	.072543	.088222	.047066	-.994988
-.180000	.062227	.080432	.162118	-.983488
-.200000	.052767	.071965	.267600	-.960839
-.220000	.044282	.062657	.365228	-.928807
-.240000	.036808	.052311	.456371	-.888251
-.260000	.030326	.040701	.542036	-.839369
-.280000	.024783	.027573	.622855	-.781851
-.300000	.020100	.012650	.699042	-.714969
-.320000	.016190	-.004363	.770318	-.637645
-.340000	.012961	-.023755	.835795	-.548528
-.360000	.010322	-.045781	.893809	-.446105
-.380000	.008188	-.070597	.941726	-.328889
-.400000	.006480	-.098168	.975728	-.195749
-.420000	.005127	-.128129	.990670	-.046434
-.440000	.004066	-.159600	.980144	.117664
-.460000	.003244	-.190996	.936980	.292554
-.480000	.002615	-.219897	.854436	.470727
-.500000	.002138	-.243121	.728199	.640795
-.520000	.001783	-.257156	.558851	.788389
-.540000	.001520	-.258956	.353778	.898767
-.560000	.001330	-.246895	.127123	.960668
-.580000	.001193	-.221385	-.102931	.969739
-.600000	.001096	-.184797	-.318616	.929696
-.620000	.001027	-.140702	-.506647	.850595
-.640000	.000978	-.092864	-.660109	.745408
-.660000	.000942	-.044464	-.777988	.626704
-.680000	.000915	.002254	-.863338	.504622
-.700000	.000892	.045971	-.921257	.386229
-.720000	.000872	.086099	-.957349	.275806
-.740000	.000852	.122542	-.976822	.175507
-.760000	.000831	.155493	-.984082	.086047
-.780000	.000808	.185288	-.982657	.007261
-.800000	.000784	.212315	-.975264	-.061498
-.820000	.000758	.236961	-.963942	-.121099
-.840000	.000731	.259582	-.950194	-.172476
-.860000	.000701	.280495	-.935112	-.216537
-.880000	.000671	.299972	-.919476	-.254126
-.900000	.000640	.318245	-.903839	-.285997
-.920000	.000608	.335507	-.888585	-.312812
-.940000	.000576	.351918	-.873974	-.335146
-.960000	.000544	.367608	-.860177	-.353496
-.980000	.000512	.382686	-.847300	-.368285
-1.000000	.000481	.397236	-.835403	-.379875
-1.020000	.000451	.411327	-.824511	-.388575
-1.040000	.000422	.425013	-.814627	-.394649
-1.060000	.000393	.438332	-.805734	-.398319
-1.080000	.000366	.451314	-.797805	-.399779
-1.100000	.000341	.463978	-.790804	-.399191
-1.120000	.000316	.476335	-.784689	-.396698
-1.140000	.000293	.488387	-.779414	-.392419
-1.160000	.000271	.500131	-.774930	-.386462
-1.180000	.000251	.511558	-.771187	-.378917
-1.200000	.000231	.522654	-.768134	-.369868
-1.220000	.000213	.533400	-.765720	-.359386
-1.240000	.000197	.543772	-.763891	-.347539
-1.260000	.000181	.553745	-.762596	-.334387
-1.280000	.000167	.563289	-.761783	-.319988
-1.300000	.000153	.572373	-.761401	-.304397
-1.320000	.000141	.580963	-.761399	-.287668
-1.340000	.000130	.589024	-.761728	-.269855
-1.360000	.000119	.596520	-.762337	-.251010
-1.380000	.000110	.603414	-.763179	-.231190
-1.400000	.000101	.609671	-.764206	-.210451
-1.420000	.000093	.615255	-.765373	-.188851
-1.440000	.000085	.620132	-.766636	-.166452
-1.460000	.000078	.624269	-.767950	-.143318
-1.480000	.000072	.627638	-.769277	-.119514
-1.500000	.000066	.630211	-.770577	-.095111
-1.520000	.000061	.631964	-.771813	-.070180
-1.540000	.000056	.632879	-.772953	-.044795
-1.560000	.000052	.632941	-.773966	-.019033
-1.580000	.000048	.632139	-.774823	.007029
-1.600000	.000044	.630468	-.775500	.033311
-1.620000	.000041	.627928	-.775976	.059734
-1.640000	.000038	.624524	-.776232	.086217
-1.660000	.000035	.620267	-.776255	.112682
-1.680000	.000032	.615175	-.776032	.139050
-1.700000	.000030	.609267	-.775556	.165247
-1.720000	.000028	.602571	-.774824	.191197
-1.740000	.000026	.595118	-.773834	.216830
-1.760000	.000024	.586944	-.772589	.242081
-1.780000	.000022	.578088	-.771094	.266885
-1.800000	.000021	.568595	-.769357	.291186
-1.820000	.000019	.558510	-.767389	.314930
-1.840000	.000018	.547883	-.765202	.338069
-1.860000	.000017	.536764	-.762811	.360561
-1.880000	.000016	.525205	-.760232	.382369
-1.900000	.000015	.513260	-.757484	.403462
-1.920000	.000014	.500981	-.754585	.423814
-1.940000	.000013	.488422	-.751555	.443406
-1.960000	.000012	.475634	-.748414	.462222
-1.980000	.000011	.462669	-.745181	.480252
-2.000000	.000011	.449577	-.741678	.497481

CROSS SECTION = .025534

xxxxx PI- P —> PI0 N PLAB = 20.80 TMIN = .0000 xxxxx

FITS TO EXPERIMENTAL DATA

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76. CHISQ = 1264.30775

T VALUES	-.00200	-.00600	-.01200	-.02000	-.02800	-.04000	-.05600	-.07200	-.09000	-.11000	-.14000	-.18000	-.22000	-.26000	-.31000
THEORETICAL	.11770	.12002	.12282	.12538	.12674	.12685	.12404	.11871	.11066	.10021	.08349	.06223	.04428	.03033	.01805
EXPERIMENTAL	.10400	.10500	.12100	.12000	.13700	.13400	.12600	.11600	.10800	.09210	.07430	.05090	.03370	.02200	.01160
EXPT. ERRORS	.00500	.00500	.00500	.00500	.00500	.00400	.00400	.00400	.00300	.00300	.00210	.00150	.00120	.00090	.00050
CHI SQUAREDS	7.50683	9.02093	.13183	1.15696	4.20945	3.19924	.24034	.45844	.78662	7.31507	19.14212	57.01921	77.76429	85.58708	********

T VALUES	-.37000	-.45000	-.55000	-.65000	-.75000	-.90000	-1.10000	-1.30000
THEORETICAL	.00920	.00363	.00142	.00096	.00084	.00064	.00034	.00015
EXPERIMENTAL	.00480	.00144	.00044	.00036	.00051	.00050	.00030	.00016
EXPT. ERRORS	.00030	:00013	.00007	.00006	.00007	.00005	.00004	.00003
CHI SQUAREDS	********	********	********	99.63159	22.42868	7.81654	1.03099	.04754

```
***** PI- P —> PIO N                                                          PLAB =  40.80     TMIN =  .0000
KINEMATICS 0  ELAB =  40.80, S =  77.44, W =   8.80, K =    4.35, E1 =    4.35, E2 =    4.45, E3 =    4.35, E4 =    4.45, Q =    4.35
```

***** NONFLIP AMPLITUDES AT A SERIES OF VALUES OF T *****

T	PHI++ (POLE) REAL	PHI++ (POLE) IMAG	PHI++ (CUT) REAL	PHI++ (CUT) IMAG	PHI++ REAL	PHI++ IMAG	FPER++ P	FPAR++ P	FPER++ C	FPAR++ C	FPER++	FPAR++
-.000	.24281	.22802	-.04462	-.07054	.19819	.15748	.19930	.12551	-.04049	-.04294	.15881	.08257
-.020	.19602	.19362	-.04204	-.06769	.15398	.12593	.16550	.10280	-.03959	-.04009	.12590	.06271
-.040	.15805	.16420	-.03960	-.06495	.11845	.09925	.13741	.08419	-.03868	-.03739	.09874	.04680
-.060	.12726	.13908	-.03730	-.06233	.08996	.07676	.11409	.06894	-.03774	-.03483	.07635	.03411
-.080	.10233	.11767	-.03512	-.05981	.06721	.05786	.09472	.05644	-.03680	-.03242	.05793	.02402
-.100	.08216	.09944	-.03306	-.05739	.04910	.04205	.07864	.04620	-.03585	-.03014	.04279	.01606
-.120	.06586	.08394	-.03111	-.05507	.03475	.02887	.06528	.03782	-.03489	-.02799	.03039	.00983
-.140	.05271	.07079	-.02928	-.05285	.02343	.01794	.05419	.03095	-.03393	-.02596	.02026	.00499
-.160	.04210	.05964	-.02754	-.05072	.01456	.00892	.04498	.02532	-.03297	-.02404	.01201	.00128
-.180	.03357	.05019	-.02590	-.04867	.00767	.00153	.03734	.02072	-.03202	-.02224	.00532	-.00152
-.200	.02671	.04221	-.02435	-.04671	.00236	-.00450	.03099	.01695	-.03107	-.02054	-.00008	-.00359
-.220	.02121	.03546	-.02289	-.04482	-.00168	-.00936	.02572	.01386	-.03013	-.01894	-.00441	-.00508
-.240	.01679	.02977	-.02151	-.04301	-.00471	-.01325	.02134	.01133	-.02920	-.01743	-.00786	-.00610
-.260	.01327	.02496	-.02020	-.04128	-.00694	-.01632	.01771	.00927	-.02828	-.01601	-.01057	-.00675
-.280	.01045	.02092	-.01897	-.03962	-.00852	-.01870	.01470	.00757	-.02737	-.01468	-.01267	-.00711
-.300	.00820	.01752	-.01781	-.03802	-.00961	-.02050	.01220	.00619	-.02648	-.01343	-.01428	-.00724
-.320	.00642	.01466	-.01671	-.03649	-.01030	-.02183	.01012	.00506	-.02560	-.01226	-.01548	-.00720
-.340	.00500	.01225	-.01568	-.03502	-.01068	-.02277	.00840	.00413	-.02473	-.01116	-.01634	-.00703
-.360	.00388	.01024	-.01470	-.03361	-.01082	-.02338	.00697	.00338	-.02388	-.01013	-.01692	-.00675
-.380	.00299	.00855	-.01378	-.03226	-.01078	-.02372	.00578	.00276	-.02305	-.00916	-.01727	-.00641
-.400	.00230	.00713	-.01291	-.03097	-.01061	-.02384	.00479	.00225	-.02224	-.00826	-.01744	-.00601
-.420	.00175	.00594	-.01209	-.02972	-.01034	-.02378	.00398	.00184	-.02144	-.00741	-.01747	-.00558
-.440	.00132	.00495	-.01131	-.02853	-.00999	-.02358	.00330	.00150	-.02067	-.00662	-.01737	-.00512
-.460	.00099	.00412	-.01058	-.02738	-.00959	-.02326	.00274	.00122	-.01991	-.00589	-.01717	-.00466
-.480	.00073	.00343	-.00989	-.02629	-.00916	-.02286	.00227	.00100	-.01917	-.00520	-.01690	-.00420
-.500	.00053	.00285	-.00924	-.02523	-.00871	-.02238	.00188	.00081	-.01845	-.00456	-.01656	-.00374
-.520	.00038	.00237	-.00863	-.02422	-.00825	-.02185	.00156	.00066	-.01775	-.00396	-.01618	-.00330
-.540	.00027	.00197	-.00805	-.02325	-.00779	-.02129	.00129	.00054	-.01706	-.00341	-.01577	-.00287
-.560	.00018	.00163	-.00751	-.02232	-.00733	-.02069	.00107	.00044	-.01640	-.00289	-.01533	-.00245
-.580	.00011	.00135	-.00700	-.02143	-.00688	-.02008	.00089	.00036	-.01576	-.00241	-.01487	-.00206
-.600	.00007	.00112	-.00652	-.02057	-.00645	-.01945	.00074	.00029	-.01513	-.00197	-.01439	-.00168
-.620	.00003	.00093	-.00606	-.01975	-.00603	-.01882	.00061	.00024	-.01453	-.00156	-.01391	-.00132
-.640	.00001	.00077	-.00563	-.01896	-.00563	-.01819	.00051	.00019	-.01394	-.00118	-.01343	-.00099
-.660	-.00001	.00064	-.00523	-.01821	-.00524	-.01757	.00042	.00016	-.01337	-.00083	-.01295	-.00068
-.680	-.00002	.00053	-.00485	-.01748	-.00487	-.01696	.00035	.00013	-.01282	-.00051	-.01247	-.00038
-.700	-.00003	.00043	-.00449	-.01678	-.00452	-.01635	.00029	.00010	-.01228	-.00022	-.01200	-.00011
-.720	-.00003	.00036	-.00416	-.01612	-.00419	-.01576	.00024	.00008	-.01177	.00005	-.01153	.00014
-.740	-.00003	.00030	-.00384	-.01548	-.00388	-.01518	.00020	.00007	-.01127	.00030	-.01107	.00037
-.760	-.00004	.00024	-.00354	-.01486	-.00358	-.01462	.00016	.00006	-.01079	.00053	-.01062	.00059
-.780	-.00003	.00020	-.00326	-.01427	-.00330	-.01407	.00014	.00005	-.01032	.00074	-.01019	.00078
-.800	-.00003	.00017	-.00300	-.01370	-.00303	-.01354	.00011	.00004	-.00988	.00093	-.00976	.00096
-.820	-.00003	.00014	-.00275	-.01316	-.00278	-.01302	.00009	.00003	-.00944	.00110	-.00935	.00113
-.840	-.00003	.00011	-.00252	-.01264	-.00255	-.01253	.00008	.00002	-.00903	.00125	-.00895	.00127
-.860	-.00003	.00009	-.00230	-.01214	-.00233	-.01205	.00006	.00002	-.00862	.00139	-.00856	.00141
-.880	-.00002	.00008	-.00210	-.01166	-.00212	-.01158	.00005	.00002	-.00824	.00151	-.00818	.00153
-.900	-.00002	.00006	-.00191	-.01120	-.00193	-.01113	.00004	.00001	-.00786	.00162	-.00782	.00164
-.920	-.00002	.00005	-.00173	-.01075	-.00175	-.01070	.00004	.00001	-.00751	.00172	-.00747	.00173
-.940	-.00002	.00004	-.00156	-.01033	-.00158	-.01029	.00003	.00001	-.00716	.00181	-.00713	.00182
-.960	-.00001	.00003	-.00140	-.00992	-.00142	-.00989	.00003	.00001	-.00683	.00189	-.00680	.00189
-.980	-.00001	.00003	-.00125	-.00953	-.00127	-.00950	.00002	.00001	-.00651	.00195	-.00649	.00196
-1.000	-.00001	.00002	-.00111	-.00915	-.00113	-.00913	.00002	.00000	-.00620	.00201	-.00619	.00201
-1.020	-.00001	.00002	-.00099	-.00879	-.00099	-.00877	.00001	.00000	-.00591	.00206	-.00589	.00206
-1.040	-.00001	.00002	-.00086	-.00845	-.00087	-.00843	.00001	.00000	-.00563	.00210	-.00561	.00210
-1.060	-.00001	.00001	-.00075	-.00811	-.00076	-.00810	.00001	.00000	-.00535	.00213	-.00534	.00213
-1.080	-.00001	.00001	-.00064	-.00779	-.00065	-.00778	.00001	.00000	-.00509	.00215	-.00509	.00216
-1.100	-.00001	.00001	-.00054	-.00749	-.00055	-.00748	.00001	.00000	-.00484	.00217	-.00484	.00217
-1.120	-.00000	.00001	-.00045	-.00719	-.00046	-.00719	.00001	.00000	-.00460	.00219	-.00460	.00219
-1.140	-.00000	.00001	-.00037	-.00691	-.00037	-.00691	.00000	.00000	-.00438	.00219	-.00437	.00220
-1.160	-.00000	.00000	-.00029	-.00664	-.00029	-.00664	.00000	.00000	-.00416	.00220	-.00415	.00220
-1.180	-.00000	.00000	-.00021	-.00638	-.00021	-.00638	.00000	.00000	-.00394	.00220	-.00394	.00220
-1.200	-.00000	.00000	-.00014	-.00613	-.00014	-.00613	.00000	.00000	-.00374	.00219	-.00374	.00219
-1.220	-.00000	.00000	-.00008	-.00589	-.00008	-.00589	.00000	.00000	-.00355	.00218	-.00355	.00218
-1.240	-.00000	.00000	-.00002	-.00566	-.00002	-.00566	.00000	.00000	-.00337	.00217	-.00336	.00217
-1.260	-.00000	.00000	.00004	-.00544	.00004	-.00544	.00000	.00000	-.00319	.00215	-.00319	.00215
-1.280	-.00000	.00000	.00009	-.00523	.00009	-.00523	.00000	.00000	-.00302	.00213	-.00302	.00213
-1.300	-.00000	.00000	.00014	-.00502	.00014	-.00502	.00000	.00000	-.00286	.00211	-.00286	.00211
-1.320	-.00000	.00000	.00018	-.00483	.00018	-.00483	.00000	.00000	-.00270	.00209	-.00270	.00209
-1.340	-.00000	.00000	.00022	-.00464	.00022	-.00464	.00000	.00000	-.00256	.00206	-.00256	.00206
-1.360	-.00000	.00000	.00026	-.00446	.00026	-.00446	.00000	.00000	-.00242	.00203	-.00242	.00203
-1.380	-.00000	.00000	.00030	-.00428	.00029	-.00428	.00000	.00000	-.00228	.00200	-.00228	.00200
-1.400	-.00000	.00000	.00033	-.00412	.00033	-.00412	.00000	.00000	-.00215	.00197	-.00215	.00197
-1.420	-.00000	.00000	.00036	-.00396	.00036	-.00396	.00000	.00000	-.00203	.00194	-.00203	.00194
-1.440	-.00000	.00000	.00038	-.00380	.00038	-.00380	.00000	.00000	-.00192	.00191	-.00192	.00191
-1.460	-.00000	.00000	.00041	-.00366	.00041	-.00366	.00000	.00000	-.00181	.00187	-.00180	.00187
-1.480	-.00000	.00000	.00043	-.00351	.00043	-.00351	.00000	.00000	-.00170	.00184	-.00170	.00184
-1.500	-.00000	.00000	.00045	-.00338	.00045	-.00338	.00000	.00000	-.00160	.00180	-.00160	.00180
-1.520	-.00000	.00000	.00047	-.00325	.00047	-.00325	.00000	.00000	-.00150	.00177	-.00150	.00177
-1.540	-.00000	.00000	.00048	-.00312	.00048	-.00312	.00000	.00000	-.00141	.00173	-.00141	.00173
-1.560	-.00000	.00000	.00050	-.00300	.00050	-.00300	.00000	.00000	-.00132	.00169	-.00132	.00169
-1.580	-.00000	.00000	.00051	-.00288	.00051	-.00288	.00000	.00000	-.00124	.00166	-.00124	.00166
-1.600	-.00000	.00000	.00052	-.00277	.00052	-.00277	.00000	.00000	-.00116	.00162	-.00116	.00162
-1.620	-.00000	.00000	.00053	-.00266	.00053	-.00266	.00000	.00000	-.00109	.00158	-.00109	.00158
-1.640	-.00000	.00000	.00054	-.00256	.00054	-.00256	.00000	.00000	-.00102	.00155	-.00102	.00155
-1.660	-.00000	.00000	.00055	-.00246	.00055	-.00246	.00000	.00000	-.00095	.00151	-.00095	.00151
-1.680	-.00000	.00000	.00056	-.00236	.00056	-.00236	.00000	.00000	-.00089	.00147	-.00089	.00147
-1.700	-.00000	.00000	.00056	-.00227	.00056	-.00227	.00000	.00000	-.00082	.00144	-.00082	.00144
-1.720	-.00000	.00000	.00057	-.00219	.00057	-.00219	.00000	.00000	-.00077	.00140	-.00077	.00140
-1.740	-.00000	.00000	.00057	-.00210	.00057	-.00210	.00000	.00000	-.00071	.00136	-.00071	.00136
-1.760	-.00000	.00000	.00057	-.00202	.00057	-.00202	.00000	.00000	-.00066	.00133	-.00066	.00133
-1.780	-.00000	.00000	.00057	-.00194	.00057	-.00194	.00000	.00000	-.00061	.00129	-.00061	.00129
-1.800	-.00000	.00000	.00058	-.00187	.00058	-.00187	.00000	.00000	-.00056	.00126	-.00056	.00126
-1.820	-.00000	.00000	.00058	-.00179	.00058	-.00179	.00000	.00000	-.00052	.00123	-.00052	.00123
-1.840	-.00000	.00000	.00058	-.00172	.00058	-.00172	.00000	-.00000	-.00048	.00119	-.00048	.00119
-1.860	-.00000	.00000	.00058	-.00166	.00058	-.00166	.00000	-.00000	-.00044	.00116	-.00044	.00116
-1.880	-.00000	.00000	.00057	-.00159	.00057	-.00159	.00000	-.00000	-.00040	.00113	-.00040	.00113
-1.900	-.00000	-.00000	.00057	-.00153	.00057	-.00153	.00000	-.00000	-.00037	.00110	-.00037	.00110
-1.920	-.00000	-.00000	.00057	-.00147	.00057	-.00147	.00000	-.00000	-.00033	.00106	-.00033	.00106
-1.940	-.00000	-.00000	.00057	-.00141	.00057	-.00141	.00000	-.00000	-.00030	.00103	-.00030	.00103
-1.960	-.00000	-.00000	.00056	-.00136	.00056	-.00136	.00000	-.00000	-.00027	.00100	-.00027	.00100
-1.980	-.00000	-.00000	.00056	-.00130	.00056	-.00130	.00000	-.00000	-.00024	.00097	-.00024	.00097
-2.000	-.00000	-.00000	.00056	-.00125	.00056	-.00125	.00000	-.00000	-.00022	.00095	-.00022	.00095

***** PI- P ---> PI0 N PLAB = 40.80 TMIN = .0000
KINEMATICS 0 ELAB = 40.80, S = 77.44, W = 8.80, K = 4.35, E1 = 4.35, E2 = 4.45, E3 = 4.35, E4 = 4.45, Q = 4.35

***** FLIP AMPLITUDES AT A SERIES OF VALUES OF T *****

T	PHI+- (POLE) REAL	IMAG	PHI+- (CUT) REAL	IMAG	PHI+- REAL	IMAG	FPER+- P	FPAR+- P	FPER+- C	FPAR+- C	FPER+-	FPAR+-
-.000	.00010	.00009	-.00000	-.00000	.00010	.00009	.00008	.00005	-.00000	-.00000	.00008	.00005
-.020	.12089	.11941	-.00324	-.00364	.11765	.11577	.10206	.06340	-.00280	-.00200	.09926	.06139
-.040	.14627	.15197	-.00422	-.00482	.14206	.14716	.12718	.07792	-.00374	-.00254	.12343	.07537
-.060	.15291	.16711	-.00476	-.00552	.14815	.16160	.13709	.08283	-.00433	-.00279	.13276	.08004
-.080	.15032	.17285	-.00506	-.00596	.14525	.16689	.13915	.08291	-.00472	-.00289	.13443	.08002
-.100	.14269	.17270	-.00522	-.00624	.13747	.16646	.13658	.08024	-.00498	-.00288	.13160	.07736
-.120	.13232	.16865	-.00527	-.00640	.12705	.16225	.13116	.07598	-.00514	-.00282	.12602	.07316
-.140	.12062	.16200	-.00525	-.00648	.11536	.15552	.12401	.07082	-.00524	-.00271	.11878	.06811
-.160	.10845	.15362	-.00518	-.00649	.10327	.14712	.11587	.06523	-.00528	-.00258	.11059	.06265
-.180	.09641	.14414	-.00508	-.00646	.09133	.13769	.10722	.05949	-.00528	-.00242	.10194	.05707
-.200	.08483	.13405	-.00494	-.00638	.07989	.12766	.09842	.05382	-.00524	-.00226	.09317	.05156
-.220	.07396	.12368	-.00479	-.00628	.06918	.11739	.08970	.04834	-.00518	-.00208	.08452	.04625
-.240	.06392	.11328	-.00462	-.00616	.05930	.10712	.08124	.04313	-.00510	-.00191	.07614	.04122
-.260	.05477	.10307	-.00444	-.00602	.05033	.09705	.07313	.03825	-.00500	-.00174	.06813	.03652
-.280	.04653	.09317	-.00426	-.00587	.04227	.08730	.06546	.03373	-.00488	-.00157	.06058	.03216
-.300	.03919	.08369	-.00408	-.00571	.03511	.07798	.05827	.02957	-.00476	-.00140	.05351	.02817
-.320	.03271	.07470	-.00390	-.00554	.02881	.06916	.05158	.02578	-.00462	-.00125	.04695	.02453
-.340	.02703	.06625	-.00372	-.00537	.02332	.06088	.04539	.02234	-.00449	-.00109	.04091	.02124
-.360	.02211	.05836	-.00354	-.00520	.01857	.05316	.03971	.01924	-.00434	-.00095	.03537	.01829
-.380	.01788	.05104	-.00336	-.00502	.01451	.04602	.03451	.01646	-.00420	-.00081	.03032	.01565
-.400	.01427	.04429	-.00319	-.00485	.01107	.03944	.02979	.01398	-.00405	-.00069	.02574	.01329
-.420	.01122	.03811	-.00303	-.00468	.00819	.03344	.02550	.01178	-.00390	-.00057	.02161	.01121
-.440	.00868	.03248	-.00287	-.00451	.00581	.02797	.02164	.00984	-.00375	-.00045	.01789	.00938
-.460	.00658	.02737	-.00272	-.00434	.00386	.02304	.01817	.00812	-.00360	-.00035	.01457	.00778
-.480	.00487	.02277	-.00257	-.00417	.00230	.01859	.01507	.00663	-.00346	-.00025	.01161	.00637
-.500	.00349	.01864	-.00243	-.00401	.00106	.01462	.01231	.00532	-.00331	-.00016	.00899	.00516
-.520	.00241	.01495	-.00230	-.00386	.00012	.01109	.00986	.00419	-.00317	-.00008	.00668	.00411
-.540	.00158	.01168	-.00217	-.00370	-.00058	.00797	.00769	.00321	-.00303	-.00000	.00465	.00321
-.560	.00097	.00879	-.00204	-.00356	-.00108	.00523	.00578	.00238	-.00290	.00007	.00289	.00244
-.580	.00053	.00626	-.00193	-.00341	-.00140	.00285	.00412	.00166	-.00277	.00013	.00135	.00179
-.600	.00024	.00405	-.00182	-.00327	-.00158	.00078	.00267	.00106	-.00264	.00019	.00003	.00124
-.620	.00007	.00214	-.00171	-.00314	-.00164	-.00100	.00141	.00055	-.00251	.00024	-.00110	.00079
-.640	.00000	.00050	-.00161	-.00300	-.00160	-.00251	.00033	.00013	-.00239	.00028	-.00206	.00041
-.660	.00001	-.00090	-.00151	-.00288	-.00150	-.00378	-.00059	-.00022	-.00228	.00033	-.00287	.00010
-.680	.00009	-.00207	-.00142	-.00276	-.00134	-.00483	-.00138	-.00051	-.00216	.00036	-.00354	-.00014
-.700	.00021	-.00305	-.00134	-.00264	-.00113	-.00569	-.00203	-.00073	-.00205	.00039	-.00409	-.00034
-.720	.00036	-.00385	-.00126	-.00252	-.00090	-.00637	-.00258	-.00091	-.00195	.00042	-.00452	-.00049
-.740	.00053	-.00449	-.00118	-.00241	-.00065	-.00691	-.00302	-.00105	-.00185	.00045	-.00487	-.00060
-.760	.00072	-.00500	-.00110	-.00231	-.00039	-.00731	-.00338	-.00115	-.00175	.00047	-.00513	-.00068
-.780	.00091	-.00538	-.00104	-.00221	-.00012	-.00759	-.00366	-.00122	-.00165	.00049	-.00531	-.00074
-.800	.00111	-.00566	-.00097	-.00211	.00014	-.00776	-.00387	-.00127	-.00156	.00050	-.00544	-.00077
-.820	.00130	-.00584	-.00091	-.00201	.00039	-.00785	-.00403	-.00129	-.00148	.00051	-.00550	-.00078
-.840	.00148	-.00594	-.00085	-.00192	.00063	-.00786	-.00413	-.00129	-.00139	.00052	-.00552	-.00077
-.860	.00165	-.00597	-.00080	-.00184	.00085	-.00781	-.00419	-.00128	-.00131	.00053	-.00550	-.00076
-.880	.00181	-.00595	-.00074	-.00175	.00106	-.00770	-.00421	-.00126	-.00124	.00053	-.00545	-.00073
-.900	.00195	-.00588	-.00070	-.00167	.00125	-.00755	-.00420	-.00123	-.00116	.00053	-.00536	-.00070
-.920	.00207	-.00576	-.00065	-.00159	.00142	-.00736	-.00416	-.00119	-.00109	.00053	-.00526	-.00066
-.940	.00218	-.00561	-.00061	-.00152	.00157	-.00713	-.00410	-.00115	-.00103	.00053	-.00513	-.00062
-.960	.00227	-.00544	-.00057	-.00145	.00171	-.00689	-.00402	-.00110	-.00096	.00053	-.00499	-.00057
-.980	.00235	-.00524	-.00053	-.00138	.00182	-.00662	-.00393	-.00105	-.00090	.00052	-.00483	-.00052
-1.000	.00241	-.00503	-.00049	-.00131	.00192	-.00635	-.00382	-.00099	-.00085	.00052	-.00466	-.00047
-1.020	.00245	-.00481	-.00046	-.00125	.00199	-.00606	-.00370	-.00094	-.00079	.00051	-.00449	-.00043
-1.040	.00248	-.00458	-.00043	-.00119	.00206	-.00577	-.00357	-.00088	-.00074	.00050	-.00431	-.00038
-1.060	.00250	-.00434	-.00040	-.00113	.00210	-.00547	-.00344	-.00083	-.00069	.00049	-.00413	-.00033
-1.080	.00250	-.00410	-.00037	-.00108	.00213	-.00518	-.00331	-.00077	-.00064	.00048	-.00395	-.00029
-1.100	.00249	-.00387	-.00034	-.00103	.00215	-.00489	-.00317	-.00072	-.00060	.00047	-.00377	-.00025
-1.120	.00247	-.00363	-.00032	-.00097	.00216	-.00461	-.00303	-.00067	-.00056	.00046	-.00359	-.00021
-1.140	.00244	-.00340	-.00029	-.00093	.00215	-.00433	-.00290	-.00062	-.00052	.00045	-.00341	-.00017
-1.160	.00241	-.00318	-.00027	-.00088	.00214	-.00406	-.00276	-.00057	-.00048	.00044	-.00324	-.00013
-1.180	.00236	-.00296	-.00025	-.00084	.00211	-.00380	-.00263	-.00053	-.00044	.00043	-.00307	-.00010
-1.200	.00231	-.00275	-.00023	-.00079	.00208	-.00354	-.00249	-.00049	-.00041	.00042	-.00291	-.00007
-1.220	.00225	-.00255	-.00021	-.00075	.00204	-.00330	-.00237	-.00045	-.00038	.00040	-.00274	-.00004
-1.240	.00219	-.00236	-.00020	-.00071	.00199	-.00307	-.00224	-.00041	-.00035	.00039	-.00259	-.00002
-1.260	.00213	-.00217	-.00018	-.00068	.00194	-.00285	-.00212	-.00037	-.00032	.00038	-.00244	.00000
-1.280	.00206	-.00200	-.00017	-.00064	.00189	-.00264	-.00200	-.00034	-.00030	.00036	-.00230	.00002
-1.300	.00199	-.00184	-.00016	-.00061	.00183	-.00244	-.00189	-.00031	-.00027	.00035	-.00216	.00004
-1.320	.00192	-.00168	-.00014	-.00058	.00177	-.00226	-.00178	-.00028	-.00025	.00034	-.00203	.00006
-1.340	.00184	-.00154	-.00013	-.00054	.00171	-.00208	-.00168	-.00025	-.00023	.00033	-.00190	.00007
-1.360	.00177	-.00140	-.00012	-.00052	.00165	-.00191	-.00158	-.00023	-.00021	.00031	-.00178	.00008
-1.380	.00169	-.00127	-.00011	-.00049	.00158	-.00176	-.00148	-.00020	-.00019	.00030	-.00167	.00010
-1.400	.00162	-.00115	-.00010	-.00046	.00151	-.00161	-.00139	-.00018	-.00017	.00029	-.00156	.00010
-1.420	.00154	-.00104	-.00009	-.00044	.00145	-.00148	-.00131	-.00016	-.00015	.00027	-.00146	.00011
-1.440	.00147	-.00094	-.00008	-.00041	.00138	-.00135	-.00122	-.00015	-.00014	.00026	-.00136	.00012
-1.460	.00140	-.00084	-.00008	-.00039	.00132	-.00123	-.00115	-.00013	-.00012	.00025	-.00127	.00012
-1.480	.00133	-.00076	-.00007	-.00037	.00125	-.00112	-.00107	-.00011	-.00011	.00024	-.00118	.00012
-1.500	.00126	-.00068	-.00006	-.00035	.00119	-.00102	-.00100	-.00010	-.00010	.00023	-.00110	.00013
-1.520	.00119	-.00060	-.00006	-.00033	.00113	-.00093	-.00094	-.00009	-.00009	.00022	-.00103	.00013
-1.540	.00112	-.00053	-.00005	-.00031	.00107	-.00084	-.00088	-.00008	-.00008	.00021	-.00095	.00013
-1.560	.00106	-.00047	-.00005	-.00029	.00101	-.00076	-.00082	-.00007	-.00007	.00020	-.00089	.00013
-1.580	.00100	-.00041	-.00004	-.00027	.00096	-.00069	-.00076	-.00006	-.00006	.00019	-.00082	.00013
-1.600	.00094	-.00036	-.00004	-.00026	.00090	-.00062	-.00071	-.00005	-.00005	.00018	-.00076	.00013
-1.620	.00089	-.00031	-.00004	-.00024	.00085	-.00055	-.00066	-.00004	-.00004	.00017	-.00071	.00012
-1.640	.00083	-.00027	-.00003	-.00023	.00080	-.00050	-.00062	-.00004	-.00004	.00016	-.00065	.00012
-1.660	.00078	-.00023	-.00003	-.00021	.00075	-.00045	-.00057	-.00003	-.00003	.00015	-.00061	.00012
-1.680	.00073	-.00020	-.00003	-.00020	.00070	-.00040	-.00053	-.00002	-.00003	.00014	-.00056	.00012
-1.700	.00068	-.00017	-.00002	-.00019	.00066	-.00035	-.00050	-.00002	-.00002	.00013	-.00052	.00011
-1.720	.00064	-.00014	-.00002	-.00017	.00062	-.00031	-.00046	-.00002	-.00002	.00012	-.00048	.00011
-1.740	.00060	-.00011	-.00002	-.00016	.00058	-.00028	-.00043	-.00001	-.00001	.00012	-.00044	.00010
-1.760	.00056	-.00009	-.00002	-.00015	.00054	-.00025	-.00040	-.00001	-.00001	.00011	-.00041	.00010
-1.780	.00052	-.00007	-.00001	-.00014	.00050	-.00022	-.00037	-.00001	-.00000	.00010	-.00038	.00010
-1.800	.00048	-.00006	-.00001	-.00013	.00047	-.00019	-.00034	-.00000	-.00000	.00009	-.00035	.00009
-1.820	.00045	-.00004	-.00001	-.00012	.00044	-.00016	-.00032	-.00000	.00000	.00009	-.00032	.00009
-1.840	.00042	-.00003	-.00001	-.00012	.00041	-.00014	-.00030	.00000	.00000	.00008	-.00029	.00008
-1.860	.00039	-.00001	-.00001	-.00011	.00038	-.00012	-.00027	.00000	.00000	.00008	-.00027	.00008
-1.880	.00036	-.00000	-.00001	-.00010	.00035	-.00010	-.00025	.00000	.00001	.00007	-.00025	.00007
-1.900	.00033	.00000	-.00001	-.00009	.00032	-.00009	-.00024	.00001	.00001	.00007	-.00023	.00007
-1.920	.00031	.00001	-.00001	-.00009	.00030	-.00007	-.00022	.00001	.00001	.00006	-.00021	.00007
-1.940	.00028	.00002	-.00001	-.00008	.00028	-.00006	-.00020	.00001	.00001	.00006	-.00019	.00006
-1.960	.00026	.00002	-.00001	-.00007	.00026	-.00005	-.00019	.00001	.00001	.00005	-.00018	.00006
-1.980	.00024	.00003	-.00000	-.00007	.00024	-.00004	-.00017	.00001	.00001	.00005	-.00016	.00006
-2.000	.00022	.00003	-.00000	-.00006	.00022	-.00003	-.00016	.00001	.00001	.00004	-.00015	.00005

xxxxx PI- P —> PI0 N PLAB = 40.80 TMIN = .0000

KINEMATICS 0 ELAB = 40.80, S = 77.44, W = 8.80, K = 4.35, E1 = 4.35, E2 = 4.45, E3 = 4.35, E4 = 4.45, Q = 4.35

T	DS/DT	P	R	A
-.000000	.064078	.000084	-.001102	.999999
-.020000	.066813	.090091	-.989987	.108666
-.040000	.065715	.101365	-.921323	-.375352
-.060000	.062047	.102068	-.749380	-.654226
-.080000	.056815	.099001	-.565286	-.818932
-.100000	.050784	.094239	-.391504	-.915338
-.120000	.044507	.088515	-.233015	-.968436
-.140000	.038365	.082071	-.089548	-.992595
-.160000	.032602	.074932	.040698	-.996358
-.180000	.027360	.067018	.159804	-.984871
-.200000	.022707	.058184	.269686	-.961189
-.220000	.018657	.048243	.371948	-.926999
-.240000	.015190	.036969	.467824	-.883048
-.260000	.012266	.024109	.558148	-.829391
-.280000	.009831	.009385	.643307	-.765551
-.300000	.007827	-.007496	.723166	-.690633
-.320000	.006196	-.026815	.796967	-.603428
-.340000	.004882	-.048810	.863170	-.502549
-.360000	.003834	-.073614	.919288	-.386639
-.380000	.003007	-.101156	.961714	-.254705
-.400000	.002359	-.131038	.985628	-.106614
-.420000	.001857	-.162371	.985127	.056211
-.440000	.001472	-.193620	.953740	.229980
-.460000	.001179	-.222526	.885527	.407829
-.480000	.000957	-.246215	.776780	.579647
-.500000	.000792	-.261595	.627989	.732938
-.520000	.000669	-.266014	.445241	.854984
-.540000	.000578	-.258005	.240088	.935837
-.560000	.000510	-.237753	.027478	.970937
-.580000	.000461	-.207039	-.177584	.962080
-.600000	.000423	-.168692	-.363143	.916335
-.620000	.000394	-.125837	-.521965	.843633
-.640000	.000372	-.081270	-.651520	.754266
-.660000	.000353	-.037122	-.752848	.657147
-.680000	.000336	.005201	-.829123	.559042
-.700000	.000321	.044914	-.884408	.464549
-.720000	.000307	.081692	-.922829	.376448
-.740000	.000294	.115510	-.948124	.296173
-.760000	.000280	.146519	-.963455	.224247
-.780000	.000266	.174957	-.971386	.160619
-.800000	.000253	.201097	-.973938	.104906
-.820000	.000239	.225208	-.972668	.056561
-.840000	.000226	.247541	-.968762	.014968
-.860000	.000212	.268321	-.963112	-.020491
-.880000	.000199	.287742	-.956380	-.050407
-.900000	.000186	.305970	-.949057	-.075322
-.920000	.000174	.323142	-.941497	-.095727
-.940000	.000162	.339370	-.933954	-.112057
-.960000	.000150	.354748	-.926609	-.124700
-.980000	.000139	.369345	-.919581	-.133993
-1.000000	.000129	.383220	-.912949	-.140237
-1.020000	.000119	.396413	-.906758	-.143692
-1.040000	.000109	.408954	-.901027	-.144591
-1.060000	.000101	.420862	-.895760	-.143139
-1.080000	.000092	.432148	-.890945	-.139517
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-1.120000	.000078	.452859	-.882575	-.126409
-1.140000	.000071	.462274	-.878957	-.117206
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-1.180000	.000060	.479163	-.872664	-.094132
-1.200000	.000054	.486605	-.869906	-.080489
-1.220000	.000050	.493354	-.867353	-.065584
-1.240000	.000045	.499391	-.864960	-.049519
-1.260000	.000041	.504697	-.862689	-.032392
-1.280000	.000038	.509254	-.860498	-.014300
-1.300000	.000035	.513044	-.858349	.004663
-1.320000	.000032	.516054	-.856208	.024402
-1.340000	.000029	.518271	-.854041	.044826
-1.360000	.000026	.519686	-.851816	.065844
-1.380000	.000024	.520293	-.849507	.087363
-1.400000	.000022	.520090	-.847090	.109296
-1.420000	.000020	.519078	-.844542	.131553
-1.440000	.000018	.517265	-.841847	.154049
-1.460000	.000017	.514661	-.838989	.176698
-1.480000	.000015	.511280	-.835957	.199420
-1.500000	.000014	.507141	-.832745	.222134
-1.520000	.000013	.502269	-.829347	.244764
-1.540000	.000012	.496689	-.825762	.267238
-1.560000	.000011	.490434	-.821992	.289488
-1.580000	.000010	.483538	-.818041	.311449
-1.600000	.000009	.476038	-.813915	.333062
-1.620000	.000008	.467973	-.809625	.354272
-1.640000	.000008	.459388	-.805180	.375030
-1.660000	.000007	.450325	-.800595	.395292
-1.680000	.000007	.440830	-.795883	.415018
-1.700000	.000006	.430949	-.791059	.434176
-1.720000	.000006	.420728	-.786141	.452737
-1.740000	.000005	.410216	-.781145	.470676
-1.760000	.000005	.399457	-.776088	.487977
-1.780000	.000004	.388497	-.770988	.504626
-1.800000	.000004	.377380	-.765863	.520613
-1.820000	.000004	.366150	-.760730	.535933
-1.840000	.000003	.354847	-.755604	.550586
-1.860000	.000003	.343512	-.750504	.564574
-1.880000	.000003	.332180	-.745443	.577903
-1.900000	.000003	.320888	-.740436	.590581
-1.920000	.000003	.309668	-.735497	.602619
-1.940000	.000002	.298550	-.730639	.614032
-1.960000	.000002	.287562	-.725872	.624834
-1.980000	.000002	.276730	-.721209	.635042
-2.000000	.000002	.266078	-.716657	.644674

CROSS SECTION = .011990

xxxxx PI- P —> PI0 N PLAB = 40.80 TMIN = .0000 xxxxx

FITS TO EXPERIMENTAL DATA

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76. CHISQ = 2945.67045

T VALUES	-.00200	-.00600	-.01210	-.02000	-.02800	-.04000	-.05600	-.07200	-.09000	-.11000	-.14000	-.18000	-.22000	-.26000	-.31000
THEORETICAL	.06456	.06539	.06627	.06681	.06676	.06571	.06293	.05904	.05386	.04765	.03836	.02736	.01866	.01227	.00697
EXPERIMENTAL	.05060	.05780	.05520	.05990	.06210	.06210	.05900	.05420	.04800	.04010	.03140	.02020	.01310	.00760	.00424
EXPT. ERRORS	.00210	.00230	.00180	.00190	.00190	.00160	.00160	.00150	.00120	.00110	.00080	.00050	.00040	.00030	.00018
CHI SQUAREDS	44.22014	10.87698	37.81251	13.23627	6.00778	5.10453	6.04586	10.41751	23.85003	47.09566	75.79463	**********	**********	**********	**********

T VALUES	-.37000	-.45000	-.55000	-.65000	-.75000	-.90000	-1.10000	-1.30000
THEORETICAL	.00340	.00132	.00054	.00036	.00029	.00019	.00008	.00003
EXPERIMENTAL	.00173	.00050	.00009	.00010	.00008	.00007	.00004	.00002
EXPT. ERRORS	.00011	.00004	.00002	.00002	.00002	.00001	.00001	.00001
CHI SQUAREDS	**********	**********	**********	**********	**********	**********	28.64120	5.89800

***** PI- P —> PI0 N PLAB = 64.40 TMIN = -.0000
KINEMATICS 0 ELAB = 64.40, S = 121.71, W = 11.03, K = 5.48, E1 = 5.48, E2 = 5.56, E3 = 5.48, E4 = 5.56, Q = 5.48

***** NONFLIP AMPLITUDES AT A SERIES OF VALUES OF T *****

T	PHI++ (POLE) REAL	IMAG	PHI++ (CUT) REAL	IMAG	PHI++ REAL	IMAG	FPER++ P	FPAR++ P	FPER++ C	FPAR++ C	FPER++	FPAR++
-.000	.19544	.18353	-.03498	-.05398	.16046	.12955	.16042	.10102	-.03156	-.03275	.12886	.06828
-.020	.15663	.15472	-.03291	-.05170	.12372	.10302	.13224	.08214	-.03079	-.03049	.10145	.05165
-.040	.12538	.13026	-.03095	-.04951	.09442	.08075	.10901	.06679	-.03001	-.02836	.07900	.03842
-.060	.10022	.10953	-.02911	-.04742	.07111	.06211	.08985	.05429	-.02921	-.02636	.06064	.02793
-.080	.08000	.09200	-.02737	-.04542	.05263	.04658	.07406	.04413	-.02842	-.02446	.04564	.01966
-.100	.06377	.07718	-.02573	-.04350	.03804	.03368	.06104	.03586	-.02762	-.02268	.03342	.01318
-.120	.05075	.06468	-.02418	-.04166	.02657	.02302	.05030	.02914	-.02682	-.02100	.02348	.00814
-.140	.04032	.05415	-.02272	-.03990	.01760	.01425	.04145	.02367	-.02602	-.01942	.01544	.00425
-.160	.03197	.04529	-.02135	-.03822	.01063	.00707	.03416	.01923	-.02523	-.01794	.00893	.00129
-.180	.02531	.03784	-.02005	-.03660	.00526	.00124	.02815	.01562	-.02444	-.01654	.00371	-.00092
-.200	.01999	.03159	-.01882	-.03506	.00117	-.00347	.02319	.01268	-.02366	-.01523	-.00047	-.00254
-.220	.01576	.02635	-.01767	-.03358	-.00191	-.00723	.01911	.01030	-.02289	-.01400	-.00378	-.00370
-.240	.01239	.02196	-.01658	-.03216	-.00419	-.01020	.01574	.00836	-.02213	-.01284	-.00638	-.00448
-.260	.00971	.01828	-.01556	-.03080	-.00584	-.01252	.01297	.00679	-.02138	-.01175	-.00841	-.00497
-.280	.00760	.01521	-.01459	-.02950	-.00700	-.01429	.01069	.00551	-.02065	-.01074	-.00996	-.00523
-.300	.00592	.01264	-.01368	-.02825	-.00776	-.01561	.00880	.00447	-.01992	-.00979	-.01112	-.00532
-.320	.00460	.01050	-.01282	-.02706	-.00823	-.01656	.00725	.00362	-.01922	-.00890	-.01196	-.00527
-.340	.00356	.00872	-.01202	-.02592	-.00846	-.01720	.00597	.00294	-.01852	-.00806	-.01255	-.00513
-.360	.00274	.00723	-.01125	-.02483	-.00852	-.01760	.00492	.00238	-.01784	-.00729	-.01292	-.00490
-.380	.00210	.00599	-.01054	-.02378	-.00844	-.01779	.00405	.00193	-.01718	-.00656	-.01313	-.00463
-.400	.00160	.00496	-.00986	-.02278	-.00826	-.01781	.00334	.00157	-.01653	-.00588	-.01320	-.00432
-.420	.00121	.00411	-.00923	-.02182	-.00802	-.01771	.00275	.00127	-.01590	-.00525	-.01316	-.00398
-.440	.00091	.00340	-.00863	-.02090	-.00772	-.01750	.00226	.00103	-.01529	-.00466	-.01303	-.00364
-.460	.00067	.00281	-.00806	-.02002	-.00739	-.01721	.00186	.00083	-.01469	-.00412	-.01283	-.00328
-.480	.00050	.00232	-.00753	-.01917	-.00704	-.01685	.00153	.00067	-.01411	-.00361	-.01258	-.00293
-.500	.00036	.00191	-.00703	-.01837	-.00668	-.01645	.00126	.00055	-.01355	-.00314	-.01228	-.00259
-.520	.00025	.00158	-.00656	-.01759	-.00631	-.01601	.00104	.00044	-.01300	-.00270	-.01196	-.00226
-.540	.00018	.00130	-.00612	-.01685	-.00595	-.01555	.00086	.00036	-.01247	-.00230	-.01161	-.00194
-.560	.00012	.00107	-.00571	-.01614	-.00559	-.01507	.00071	.00029	-.01195	-.00192	-.01125	-.00163
-.580	.00007	.00088	-.00532	-.01546	-.00524	-.01458	.00058	.00023	-.01145	-.00157	-.01087	-.00134
-.600	.00004	.00073	-.00495	-.01481	-.00491	-.01409	.00048	.00019	-.01097	-.00126	-.01049	-.00107
-.620	.00002	.00060	-.00460	-.01419	-.00458	-.01359	.00039	.00015	-.01050	-.00096	-.01011	-.00081
-.640	.00000	.00049	-.00428	-.01359	-.00427	-.01310	.00032	.00012	-.01005	-.00069	-.00973	-.00057
-.660	-.00001	.00040	-.00397	-.01302	-.00398	-.01262	.00027	.00010	-.00962	-.00044	-.00935	-.00034
-.680	-.00001	.00033	-.00369	-.01248	-.00370	-.01215	.00022	.00008	-.00920	-.00021	-.00898	-.00013
-.700	-.00002	.00027	-.00342	-.01195	-.00344	-.01168	.00018	.00007	-.00879	-.00001	-.00861	.00006
-.720	-.00002	.00022	-.00316	-.01145	-.00318	-.01123	.00015	.00005	-.00840	.00018	-.00825	.00024
-.740	-.00002	.00018	-.00293	-.01097	-.00295	-.01079	.00012	.00004	-.00802	.00036	-.00790	.00040
-.760	-.00002	.00015	-.00270	-.01051	-.00273	-.01036	.00010	.00003	-.00766	.00051	-.00756	.00055
-.780	-.00002	.00012	-.00249	-.01007	-.00252	-.00995	.00008	.00003	-.00731	.00065	-.00722	.00068
-.800	-.00002	.00010	-.00230	-.00965	-.00232	-.00955	.00007	.00002	-.00697	.00078	-.00690	.00080
-.820	-.00002	.00008	-.00211	-.00924	-.00213	-.00916	.00006	.00002	-.00665	.00090	-.00659	.00091
-.840	-.00002	.00007	-.00194	-.00886	-.00196	-.00879	.00005	.00001	-.00633	.00100	-.00629	.00101
-.860	-.00001	.00005	-.00178	-.00849	-.00180	-.00843	.00004	.00001	-.00603	.00109	-.00600	.00110
-.880	-.00001	.00004	-.00163	-.00813	-.00164	-.00809	.00003	.00001	-.00575	.00117	-.00571	.00118
-.900	-.00001	.00004	-.00149	-.00779	-.00150	-.00776	.00003	.00001	-.00547	.00124	-.00544	.00125
-.920	-.00001	.00003	-.00135	-.00747	-.00137	-.00744	.00002	.00001	-.00520	.00131	-.00518	.00131
-.940	-.00001	.00002	-.00123	-.00715	-.00124	-.00713	.00002	.00000	-.00495	.00136	-.00493	.00136
-.960	-.00001	.00002	-.00111	-.00686	-.00112	-.00684	.00001	.00000	-.00471	.00141	-.00469	.00141
-.980	-.00001	.00002	-.00101	-.00657	-.00101	-.00655	.00001	.00000	-.00447	.00144	-.00446	.00145
-1.000	-.00001	.00001	-.00090	-.00630	-.00091	-.00628	.00001	.00000	-.00425	.00148	-.00424	.00148
-1.020	-.00001	.00001	-.00081	-.00603	-.00082	-.00602	.00001	.00000	-.00403	.00150	-.00402	.00151
-1.040	-.00000	.00001	-.00072	-.00578	-.00073	-.00577	.00001	.00000	-.00383	.00152	-.00382	.00153
-1.060	-.00000	.00001	-.00064	-.00554	-.00064	-.00553	.00001	.00000	-.00363	.00154	-.00363	.00154
-1.080	-.00000	.00001	-.00056	-.00531	-.00057	-.00530	.00000	.00000	-.00344	.00155	-.00344	.00155
-1.100	-.00000	.00000	-.00049	-.00509	-.00049	-.00508	.00000	.00000	-.00326	.00156	-.00326	.00156
-1.120	-.00000	.00000	-.00042	-.00488	-.00043	-.00487	.00000	.00000	-.00309	.00156	-.00309	.00156
-1.140	-.00000	.00000	-.00036	-.00467	-.00036	-.00467	.00000	.00000	-.00293	.00156	-.00292	.00156
-1.160	-.00000	.00000	-.00030	-.00448	-.00031	-.00448	.00000	.00000	-.00277	.00155	-.00277	.00155
-1.180	-.00000	.00000	-.00025	-.00429	-.00025	-.00429	.00000	.00000	-.00262	.00155	-.00262	.00155
-1.200	-.00000	.00000	-.00020	-.00412	-.00020	-.00411	.00000	.00000	-.00248	.00153	-.00247	.00153
-1.220	-.00000	.00000	-.00015	-.00394	-.00016	-.00394	.00000	.00000	-.00234	.00152	-.00234	.00152
-1.240	-.00000	.00000	-.00011	-.00378	-.00011	-.00378	.00000	.00000	-.00221	.00151	-.00221	.00151
-1.260	-.00000	.00000	-.00007	-.00362	-.00007	-.00362	.00000	.00000	-.00209	.00149	-.00208	.00149
-1.280	-.00000	.00000	-.00004	-.00347	-.00004	-.00347	.00000	.00000	-.00197	.00147	-.00197	.00147
-1.300	-.00000	.00000	-.00000	-.00333	-.00000	-.00333	.00000	.00000	-.00185	.00145	-.00185	.00145
-1.320	-.00000	.00000	.00003	-.00319	.00003	-.00319	.00000	.00000	-.00175	.00143	-.00175	.00143
-1.340	-.00000	.00000	.00006	-.00306	.00006	-.00306	.00000	.00000	-.00165	.00141	-.00164	.00141
-1.360	-.00000	.00000	.00008	-.00293	.00008	-.00293	.00000	.00000	-.00155	.00138	-.00155	.00138
-1.380	-.00000	.00000	.00011	-.00281	.00011	-.00281	.00000	.00000	-.00146	.00136	-.00146	.00136
-1.400	-.00000	.00000	.00013	-.00269	.00013	-.00269	.00000	.00000	-.00137	.00133	-.00137	.00133
-1.420	-.00000	.00000	.00015	-.00258	.00015	-.00258	.00000	.00000	-.00128	.00130	-.00128	.00130
-1.440	-.00000	.00000	.00017	-.00248	.00017	-.00248	.00000	.00000	-.00120	.00128	-.00120	.00128
-1.460	-.00000	.00000	.00019	-.00237	.00019	-.00237	.00000	.00000	-.00113	.00125	-.00113	.00125
-1.480	-.00000	.00000	.00020	-.00228	.00020	-.00228	.00000	.00000	-.00106	.00122	-.00106	.00122
-1.500	-.00000	.00000	.00022	-.00218	.00022	-.00218	.00000	.00000	-.00099	.00119	-.00099	.00119
-1.520	-.00000	.00000	.00023	-.00209	.00023	-.00209	.00000	.00000	-.00092	.00117	-.00092	.00117
-1.540	-.00000	.00000	.00024	-.00201	.00024	-.00201	.00000	.00000	-.00086	.00114	-.00086	.00114
-1.560	-.00000	.00000	.00025	-.00192	.00025	-.00192	.00000	.00000	-.00081	.00111	-.00081	.00111
-1.580	-.00000	.00000	.00026	-.00184	.00026	-.00184	.00000	.00000	-.00075	.00108	-.00075	.00108
-1.600	-.00000	.00000	.00027	-.00177	.00027	-.00177	.00000	.00000	-.00070	.00105	-.00070	.00105
-1.620	-.00000	.00000	.00027	-.00169	.00027	-.00169	.00000	.00000	-.00065	.00102	-.00065	.00102
-1.640	-.00000	.00000	.00028	-.00162	.00028	-.00162	.00000	.00000	-.00060	.00100	-.00060	.00100
-1.660	-.00000	.00000	.00028	-.00156	.00028	-.00156	.00000	.00000	-.00056	.00097	-.00056	.00097
-1.680	-.00000	.00000	.00029	-.00149	.00029	-.00149	.00000	.00000	-.00052	.00094	-.00052	.00094
-1.700	-.00000	.00000	.00029	-.00143	.00029	-.00143	.00000	.00000	-.00048	.00092	-.00048	.00092
-1.720	-.00000	.00000	.00030	-.00137	.00030	-.00137	.00000	.00000	-.00044	.00089	-.00044	.00089
-1.740	-.00000	.00000	.00030	-.00132	.00030	-.00132	.00000	.00000	-.00041	.00086	-.00041	.00086
-1.760	-.00000	.00000	.00030	-.00126	.00030	-.00126	.00000	.00000	-.00037	.00084	-.00037	.00084
-1.780	-.00000	.00000	.00030	-.00121	.00030	-.00121	.00000	.00000	-.00034	.00081	-.00034	.00081
-1.800	-.00000	.00000	.00030	-.00116	.00030	-.00116	.00000	.00000	-.00031	.00079	-.00031	.00079
-1.820	-.00000	.00000	.00030	-.00111	.00030	-.00111	.00000	.00000	-.00028	.00076	-.00028	.00076
-1.840	-.00000	.00000	.00030	-.00107	.00030	-.00107	.00000	-.00000	-.00026	.00074	-.00026	.00074
-1.860	-.00000	.00000	.00030	-.00102	.00030	-.00102	.00000	-.00000	-.00023	.00072	-.00023	.00072
-1.880	-.00000	.00000	.00030	-.00098	.00030	-.00098	.00000	-.00000	-.00021	.00069	-.00021	.00069
-1.900	-.00000	-.00000	.00030	-.00094	.00030	-.00094	.00000	-.00000	-.00019	.00067	-.00019	.00067
-1.920	-.00000	-.00000	.00030	-.00090	.00030	-.00090	.00000	-.00000	-.00017	.00065	-.00017	.00065
-1.940	-.00000	-.00000	.00030	-.00086	.00030	-.00086	.00000	-.00000	-.00015	.00063	-.00015	.00063
-1.960	-.00000	-.00000	.00029	-.00083	.00029	-.00083	.00000	-.00000	-.00013	.00061	-.00013	.00061
-1.980	-.00000	-.00000	.00029	-.00079	.00029	-.00079	.00000	-.00000	-.00011	.00059	-.00011	.00059
-2.000	-.00000	-.00000	.00029	-.00076	.00029	-.00076	.00000	-.00000	-.00010	.00057	-.00010	.00057

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***** PI- P —> PIO N                                                                      PLAB =  64.40      TMIN = -.0000
KINEMATICS 0  ELAB =  64.40, S = 121.71, W =  11.03, K =   5.48, E1 =   5.48, E2 =   5.56, E3 =   5.48, E4 =   5.56, Q =   5.48
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***** FLIP AMPLITUDES AT A SERIES OF VALUES OF T *****

T	PHI+- (POLE) REAL	IMAG	PHI+- (CUT) REAL	IMAG	PHI+- REAL	IMAG	FPER+- P	FPAR+- P	FPER+- C	FPAR+- C	FPER+-	FPAR+-
-.000	.00008	.00008	-.00000	-.00000	.00008	.00007	.00007	.00004	-.00000	-.00000	.00006	.00004
-.020	.09660	.09542	-.00240	-.00266	.09420	.09275	.08156	.05066	-.00207	-.00146	.07948	.04920
-.040	.11604	.12056	-.00312	-.00352	.11292	.11704	.10089	.06181	-.00276	-.00185	.09813	.05996
-.060	.12042	.13161	-.00352	-.00402	.11690	.12759	.10796	.06523	-.00319	-.00203	.10477	.06321
-.080	.11752	.13514	-.00374	-.00434	.11379	.13080	.10879	.06482	-.00347	-.00209	.10532	.06273
-.100	.11075	.13404	-.00384	-.00454	.10690	.12950	.10601	.06228	-.00365	-.00209	.10235	.06020
-.120	.10196	.12995	-.00388	-.00465	.09808	.12530	.10107	.05855	-.00377	-.00203	.09730	.05651
-.140	.09227	.12392	-.00386	-.00470	.08841	.11922	.09487	.05418	-.00383	-.00195	.09104	.05222
-.160	.08236	.11666	-.00380	-.00470	.07856	.11196	.08799	.04954	-.00385	-.00185	.08414	.04769
-.180	.07268	.10867	-.00371	-.00467	.06897	.10400	.08084	.04485	-.00385	-.00174	.07699	.04312
-.200	.06349	.10033	-.00361	-.00461	.05988	.09572	.07366	.04028	-.00381	-.00161	.06985	.03867
-.220	.05496	.09189	-.00349	-.00453	.05146	.08736	.06665	.03592	-.00376	-.00149	.06289	.03443
-.240	.04715	.08356	-.00336	-.00444	.04379	.07913	.05992	.03182	-.00369	-.00136	.05623	.03046
-.260	.04011	.07548	-.00323	-.00433	.03688	.07115	.05355	.02801	-.00361	-.00123	.04994	.02678
-.280	.03383	.06774	-.00310	-.00421	.03073	.06352	.04759	.02452	-.00353	-.00111	.04407	.02341
-.300	.02828	.06040	-.00296	-.00409	.02533	.05631	.04206	.02134	-.00343	-.00099	.03863	.02035
-.320	.02343	.05352	-.00282	-.00397	.02061	.04956	.03696	.01847	-.00333	-.00088	.03363	.01759
-.340	.01923	.04712	-.00269	-.00384	.01654	.04328	.03229	.01589	-.00322	-.00077	.02907	.01512
-.360	.01561	.04121	-.00255	-.00371	.01306	.03750	.02804	.01359	-.00311	-.00067	.02493	.01292
-.380	.01253	.03578	-.00242	-.00358	.01011	.03220	.02420	.01154	-.00300	-.00057	.02119	.01097
-.400	.00993	.03083	-.00230	-.00345	.00763	.02738	.02073	.00973	-.00289	-.00048	.01784	.00925
-.420	.00775	.02633	-.00218	-.00332	.00558	.02301	.01762	.00814	-.00278	-.00039	.01484	.00775
-.440	.00595	.02228	-.00206	-.00320	.00389	.01908	.01485	.00675	-.00267	-.00031	.01217	.00644
-.460	.00448	.01864	-.00195	-.00307	.00253	.01557	.01238	.00553	-.00256	-.00024	.00981	.00530
-.480	.00329	.01539	-.00184	-.00295	.00145	.01244	.01019	.00448	-.00245	-.00017	.00773	.00431
-.500	.00235	.01251	-.00173	-.00284	.00061	.00967	.00826	.00357	-.00235	-.00010	.00591	.00347
-.520	.00161	.00996	-.00164	-.00272	-.00003	.00724	.00657	.00279	-.00224	-.00005	.00432	.00274
-.540	.00105	.00772	-.00154	-.00261	-.00049	.00512	.00509	.00212	-.00214	.00001	.00294	.00213
-.560	.00064	.00577	-.00145	-.00250	-.00082	.00327	.00380	.00156	-.00204	.00006	.00176	.00161
-.580	.00034	.00408	-.00137	-.00239	-.00102	.00168	.00268	.00108	-.00195	.00010	.00074	.00118
-.600	.00015	.00262	-.00129	-.00229	-.00113	.00033	.00173	.00068	-.00185	.00014	-.00013	.00082
-.620	.00005	.00137	-.00121	-.00219	-.00116	-.00082	.00091	.00035	-.00176	.00017	-.00086	.00053
-.640	.00000	.00032	-.00113	-.00210	-.00113	-.00178	.00021	.00008	-.00168	.00021	-.00147	.00029
-.660	.00001	-.00057	-.00107	-.00201	-.00106	-.00258	-.00038	-.00014	-.00159	.00023	-.00197	.00009
-.680	.00005	-.00130	-.00100	-.00192	-.00095	-.00322	-.00087	-.00032	-.00151	.00026	-.00237	-.00006
-.700	.00013	-.00190	-.00094	-.00183	-.00081	-.00374	-.00127	-.00046	-.00143	.00028	-.00270	-.00018
-.720	.00022	-.00238	-.00088	-.00175	-.00066	-.00414	-.00160	-.00057	-.00135	.00030	-.00295	-.00027
-.740	.00033	-.00276	-.00082	-.00167	-.00050	-.00444	-.00186	-.00065	-.00128	.00031	-.00314	-.00033
-.760	.00044	-.00305	-.00077	-.00160	-.00033	-.00465	-.00206	-.00070	-.00121	.00033	-.00327	-.00037
-.780	.00055	-.00326	-.00072	-.00152	-.00017	-.00479	-.00222	-.00074	-.00114	.00034	-.00336	-.00040
-.800	.00067	-.00340	-.00068	-.00145	-.00001	-.00486	-.00233	-.00076	-.00108	.00035	-.00341	-.00041
-.820	.00078	-.00349	-.00063	-.00139	.00014	-.00487	-.00241	-.00077	-.00102	.00036	-.00342	-.00041
-.840	.00088	-.00352	-.00059	-.00132	.00029	-.00485	-.00245	-.00077	-.00096	.00036	-.00341	-.00041
-.860	.00097	-.00352	-.00055	-.00126	.00042	-.00478	-.00247	-.00076	-.00090	.00036	-.00337	-.00039
-.880	.00106	-.00348	-.00051	-.00120	.00054	-.00468	-.00246	-.00074	-.00085	.00037	-.00331	-.00037
-.900	.00113	-.00341	-.00048	-.00114	.00065	-.00455	-.00244	-.00071	-.00080	.00037	-.00323	-.00035
-.920	.00119	-.00332	-.00045	-.00109	.00075	-.00441	-.00240	-.00069	-.00075	.00037	-.00315	-.00032
-.940	.00125	-.00321	-.00042	-.00104	.00083	-.00425	-.00235	-.00066	-.00070	.00036	-.00305	-.00029
-.960	.00129	-.00309	-.00039	-.00099	.00090	-.00408	-.00228	-.00062	-.00066	.00036	-.00294	-.00026
-.980	.00132	-.00296	-.00036	-.00094	.00096	-.00389	-.00221	-.00059	-.00061	.00036	-.00283	-.00023
-1.000	.00135	-.00282	-.00034	-.00089	.00101	-.00371	-.00214	-.00055	-.00057	.00035	-.00271	-.00020
-1.020	.00136	-.00267	-.00031	-.00085	.00105	-.00352	-.00206	-.00052	-.00054	.00035	-.00259	-.00017
-1.040	.00137	-.00252	-.00029	-.00081	.00108	-.00333	-.00197	-.00049	-.00050	.00034	-.00247	-.00014
-1.060	.00137	-.00238	-.00027	-.00077	.00110	-.00314	-.00189	-.00045	-.00047	.00034	-.00235	-.00012
-1.080	.00136	-.00223	-.00025	-.00073	.00111	-.00296	-.00180	-.00042	-.00043	.00033	-.00223	-.00009
-1.100	.00134	-.00209	-.00023	-.00069	.00111	-.00278	-.00171	-.00039	-.00040	.00032	-.00211	-.00007
-1.120	.00132	-.00195	-.00021	-.00066	.00111	-.00260	-.00163	-.00036	-.00037	.00031	-.00200	-.00005
-1.140	.00130	-.00181	-.00020	-.00062	.00110	-.00243	-.00154	-.00033	-.00035	.00030	-.00189	-.00003
-1.160	.00127	-.00168	-.00018	-.00059	.00109	-.00227	-.00146	-.00030	-.00032	.00030	-.00178	-.00001
-1.180	.00124	-.00155	-.00017	-.00056	.00107	-.00211	-.00138	-.00028	-.00030	.00029	-.00167	.00001
-1.200	.00120	-.00143	-.00016	-.00053	.00105	-.00196	-.00130	-.00025	-.00027	.00028	-.00157	.00003
-1.220	.00116	-.00132	-.00014	-.00050	.00102	-.00182	-.00122	-.00023	-.00025	.00027	-.00147	.00004
-1.240	.00112	-.00121	-.00013	-.00048	.00099	-.00169	-.00115	-.00021	-.00023	.00026	-.00138	.00005
-1.260	.00108	-.00111	-.00012	-.00045	.00096	-.00156	-.00108	-.00019	-.00021	.00025	-.00129	.00006
-1.280	.00104	-.00101	-.00011	-.00043	.00093	-.00144	-.00101	-.00017	-.00020	.00024	-.00121	.00007
-1.300	.00100	-.00092	-.00010	-.00040	.00089	-.00132	-.00095	-.00015	-.00018	.00023	-.00113	.00008
-1.320	.00095	-.00084	-.00009	-.00038	.00086	-.00122	-.00089	-.00014	-.00016	.00022	-.00105	.00009
-1.340	.00091	-.00076	-.00009	-.00036	.00082	-.00112	-.00083	-.00012	-.00015	.00022	-.00098	.00009
-1.360	.00087	-.00069	-.00008	-.00034	.00079	-.00103	-.00077	-.00011	-.00014	.00021	-.00091	.00009
-1.380	.00082	-.00062	-.00007	-.00032	.00075	-.00094	-.00072	-.00010	-.00012	.00020	-.00085	.00010
-1.400	.00078	-.00056	-.00007	-.00030	.00072	-.00086	-.00067	-.00009	-.00011	.00019	-.00079	.00010
-1.420	.00074	-.00050	-.00006	-.00029	.00068	-.00079	-.00063	-.00008	-.00010	.00018	-.00073	.00010
-1.440	.00070	-.00045	-.00006	-.00027	.00064	-.00072	-.00058	-.00007	-.00009	.00017	-.00067	.00010
-1.460	.00066	-.00040	-.00005	-.00025	.00061	-.00065	-.00054	-.00006	-.00008	.00016	-.00062	.00010
-1.480	.00062	-.00036	-.00005	-.00024	.00058	-.00060	-.00050	-.00005	-.00007	.00016	-.00058	.00010
-1.500	.00059	-.00032	-.00004	-.00023	.00054	-.00054	-.00047	-.00005	-.00006	.00015	-.00053	.00010
-1.520	.00055	-.00028	-.00004	-.00021	.00051	-.00049	-.00043	-.00004	-.00006	.00014	-.00049	.00010
-1.540	.00052	-.00024	-.00003	-.00020	.00048	-.00044	-.00040	-.00004	-.00005	.00013	-.00045	.00010
-1.560	.00048	-.00021	-.00003	-.00019	.00045	-.00040	-.00037	-.00003	-.00004	.00013	-.00042	.00010
-1.580	.00045	-.00019	-.00003	-.00018	.00043	-.00036	-.00035	-.00003	-.00004	.00012	-.00038	.00009
-1.600	.00042	-.00016	-.00003	-.00017	.00040	-.00033	-.00032	-.00002	-.00003	.00011	-.00035	.00009
-1.620	.00040	-.00014	-.00002	-.00016	.00037	-.00030	-.00030	-.00002	-.00003	.00011	-.00032	.00009
-1.640	.00037	-.00012	-.00002	-.00015	.00035	-.00027	-.00027	-.00002	-.00002	.00010	-.00030	.00009
-1.660	.00034	-.00010	-.00002	-.00014	.00032	-.00024	-.00025	-.00001	-.00002	.00010	-.00027	.00008
-1.680	.00032	-.00009	-.00002	-.00013	.00030	-.00022	-.00023	-.00001	-.00002	.00009	-.00025	.00008
-1.700	.00030	-.00007	-.00001	-.00012	.00028	-.00019	-.00022	-.00001	-.00001	.00008	-.00023	.00008
-1.720	.00028	-.00006	-.00001	-.00011	.00026	-.00017	-.00020	-.00001	-.00001	.00008	-.00021	.00007
-1.740	.00026	-.00005	-.00001	-.00010	.00024	-.00015	-.00018	-.00000	-.00001	.00007	-.00019	.00007
-1.760	.00024	-.00004	-.00001	-.00010	.00023	-.00014	-.00017	-.00000	-.00001	.00007	-.00017	.00007
-1.780	.00022	-.00003	-.00001	-.00009	.00021	-.00012	-.00016	-.00000	-.00000	.00006	-.00016	.00006
-1.800	.00020	-.00002	-.00001	-.00009	.00019	-.00011	-.00014	-.00000	-.00000	.00006	-.00015	.00006
-1.820	.00019	-.00002	-.00001	-.00008	.00018	-.00010	-.00013	-.00000	.00000	.00006	-.00013	.00006
-1.840	.00017	-.00001	-.00001	-.00007	.00017	-.00008	-.00012	.00000	.00000	.00005	-.00012	.00005
-1.860	.00016	-.00001	-.00001	-.00007	.00015	-.00007	-.00011	.00000	.00000	.00005	-.00011	.00005
-1.880	.00015	-.00000	-.00001	-.00006	.00014	-.00007	-.00010	.00000	.00000	.00005	-.00010	.00005
-1.900	.00013	.00000	-.00000	-.00006	.00013	-.00006	-.00009	.00000	.00000	.00004	-.00009	.00004
-1.920	.00012	.00000	-.00000	-.00005	.00012	-.00005	-.00009	.00000	.00001	.00004	-.00008	.00004
-1.940	.00011	.00001	-.00000	-.00005	.00011	-.00004	-.00008	.00000	.00001	.00004	-.00007	.00004
-1.960	.00010	.00001	-.00000	-.00005	.00010	-.00004	-.00007	.00000	.00001	.00003	-.00007	.00004
-1.980	.00010	.00001	-.00000	-.00004	.00009	-.00003	-.00007	.00000	.00001	.00003	-.00006	.00003
-2.000	.00009	.00001	-.00000	-.00004	.00008	-.00003	-.00006	.00000	.00001	.00003	-.00005	.00003

xxxxx PI- P ―> PIO N PLAB = 64.40 TMIN = -.0000
KINEMATICS 0 ELAB = 64.40, S = 121.71, W = 11.03, K = 5.48, E1 = 5.48, E2 = 5.56, E3 = 5.48, E4 = 5.56, Q = 5.48

T	DS/DT	P	R	A
-.000000	.042531	.000076	-.001092	.999999
-.020000	.043397	.081645	-.989476	.119461
-.040000	.041883	.092333	-.926529	-.364718
-.060000	.038859	.093247	-.757385	-.646276
-.080000	.034995	.090548	-.573940	-.813876
-.100000	.030781	.086131	-.399421	-.912713
-.120000	.026557	.080666	-.239292	-.967591
-.140000	.022543	.074367	-.093570	-.992831
-.160000	.018869	.067242	.039375	-.996959
-.180000	.015602	.059193	.161507	-.985095
-.200000	.012761	.050059	.274650	-.960240
-.220000	.010337	.039631	.380313	-.924008
-.240000	.008300	.027667	.479616	-.877042
-.260000	.006613	.013894	.573231	-.819276
-.280000	.005233	-.001980	.661315	-.750105
-.300000	.004116	-.020242	.743418	-.668521
-.320000	.003223	-.041149	.818341	-.573258
-.340000	.002515	-.064867	.883987	-.462990
-.360000	.001959	-.091392	.937190	-.336634
-.380000	.001527	-.120433	.973622	-.193796
-.400000	.001193	-.151269	.987859	-.035392
-.420000	.000938	-.182601	.973789	.135614
-.440000	.000745	-.212462	.925509	.313516
-.460000	.000599	-.238283	.838771	.489576
-.480000	.000490	-.257185	.712739	.652578
-.500000	.000409	-.266530	.551431	.790497
-.520000	.000348	-.264577	.363986	.893036
-.540000	.000304	-.250977	.163284	.954122
-.560000	.000270	-.226860	-.036748	.973234
-.580000	.000244	-.194471	-.224004	.954989
-.600000	.000224	-.156554	-.390106	.907363
-.620000	.000208	-.115761	-.530885	.839500
-.640000	.000194	-.074271	-.645737	.759939
-.660000	.000183	-.033654	-.736466	.675637
-.680000	.000172	.005103	-.806152	.591687
-.700000	.000163	.041470	-.858299	.511472
-.720000	.000154	.075247	-.896299	.437019
-.740000	.000145	.106442	-.923169	.369364
-.760000	.000137	.135185	-.941446	.308877
-.780000	.000128	.161664	-.953195	.255507
-.800000	.000120	.186090	-.960056	.208956
-.820000	.000112	.208667	-.963310	.168793
-.840000	.000105	.229590	-.963944	.134536
-.860000	.000097	.249027	-.962713	.105688
-.880000	.000090	.267128	-.960185	.081774
-.900000	.000084	.284016	-.956790	.062345
-.920000	.000077	.299795	-.952845	.046993
-.940000	.000071	.314550	-.948583	.035345
-.960000	.000065	.328346	-.944170	.027064
-.980000	.000060	.341237	-.939723	.021850
-1.000000	.000055	.353263	-.935322	.019431
-1.020000	.000050	.364452	-.931017	.019561
-1.040000	.000046	.374825	-.926834	.022019
-1.060000	.000042	.384395	-.922785	.026603
-1.080000	.000038	.393169	-.918869	.033128
-1.100000	.000035	.401150	-.915075	.041423
-1.120000	.000032	.408338	-.911386	.051330
-1.140000	.000029	.414731	-.907781	.062699
-1.160000	.000026	.420324	-.904237	.075391
-1.180000	.000024	.425114	-.900726	.089274
-1.200000	.000022	.429098	-.897225	.104219
-1.220000	.000020	.432272	-.893709	.120106
-1.240000	.000018	.434637	-.890152	.136819
-1.260000	.000016	.436195	-.886534	.154244
-1.280000	.000015	.436949	-.882834	.172275
-1.300000	.000014	.436908	-.879036	.190806
-1.320000	.000012	.436083	-.875124	.209738
-1.340000	.000011	.434487	-.871086	.228975
-1.360000	.000010	.432139	-.866915	.248425
-1.380000	.000009	.429060	-.862603	.268000
-1.400000	.000009	.425275	-.858147	.287618
-1.420000	.000008	.420813	-.853548	.307200
-1.440000	.000007	.415705	-.848808	.326673
-1.460000	.000006	.409984	-.843930	.345970
-1.480000	.000006	.403688	-.838923	.365027
-1.500000	.000005	.396855	-.833794	.383789
-1.520000	.000005	.389526	-.828554	.402203
-1.540000	.000005	.381743	-.823216	.420223
-1.560000	.000004	.373549	-.817792	.437809
-1.580000	.000004	.364988	-.812297	.454926
-1.600000	.000003	.356102	-.806745	.471545
-1.620000	.000003	.346937	-.801151	.487640
-1.640000	.000003	.337534	-.795531	.503192
-1.660000	.000003	.327936	-.789900	.518186
-1.680000	.000002	.318183	-.784273	.532611
-1.700000	.000002	.308317	-.778666	.546462
-1.720000	.000002	.298374	-.773091	.559734
-1.740000	.000002	.288391	-.767564	.572430
-1.760000	.000002	.278402	-.762096	.584552
-1.780000	.000002	.268440	-.756700	.596108
-1.800000	.000001	.258535	-.751387	.607106
-1.820000	.000001	.248713	-.746167	.617557
-1.840000	.000001	.239002	-.741049	.627475
-1.860000	.000001	.229425	-.736042	.636873
-1.880000	.000001	.220002	-.731152	.645767
-1.900000	.000001	.210753	-.726387	.654175
-1.920000	.000001	.201696	-.721751	.662113
-1.940000	.000001	.192844	-.717250	.669600
-1.960000	.000001	.184212	-.712887	.676653
-1.980000	.000001	.175809	-.708664	.683291
-2.000000	.000001	.167647	-.704584	.689533

CROSS SECTION = .007206

xxxxx PI- P ―> PIO N PLAB = 64.40 TMIN = -.0000 xxxxx

FITS TO EXPERIMENTAL DATA

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76. CHISQ = 3114.30307

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   T VALUES    -.00200 -.00600 -.01200 -.02000 -.02800 -.04000 -.05600 -.07200 -.09000 -.11000 -.14000 -.18000 -.22000 -.26000 -.31000
 THEORETICAL    .04275  .04310  .04339  .04340  .04302  .04188  .03955  .03661  .03291  .02865  .02254  .01560  .01034  .00651  .00364
EXPERIMENTAL    .03200  .03590  .03450  .03680  .03690  .03700  .03650  .03070  .02840  .02290  .01700  .01060  .00680  .00420  .00209
EXPT. ERRORS    .00130  .00140  .00110  .00120  .00120  .00100  .00100  .00090  .00080  .00060  .00040  .00030  .00020  .00018  .00010
CHI SQUAREDS   68.4238226.4532165.3448530.2263626.0456423.84810 9.3022243.0701131.7469591.97249xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

   T VALUES    -.37000 -.45000 -.55000 -.65000 -.75000 -.90000-1.10000-1.30000
 THEORETICAL    .00173  .00067  .00029  .00019  .00014  .00008  .00004  .00001
EXPERIMENTAL    .00075  .00020  .00006  .00004  .00004  .00003  .00002  .00001
EXPT. ERRORS    .00006  .00002  .00001  .00001  .00001  .00001  .00000  .00000
CHI SQUAREDS   xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx85.7423218.1579818.64508
```

xxxxx PI- P —> PIO N   PLAB = 100.70   TMIN = .0000
KINEMATICS 0 ELAB = 100.70, S = 189.81, W = 13.78, K = 6.86, E1 = 6.86, E2 = 6.92, E3 = 6.86, E4 = 6.92, Q = 6.86

xxxxx NONFLIP AMPLITUDES AT A SERIES OF VALUES OF T xxxxx

T	PHI++ (POLE) REAL	PHI++ (POLE) IMAG	PHI++ (CUT) REAL	PHI++ (CUT) IMAG	PHI++ REAL	PHI++ IMAG	FPER++ P	FPAR++ P	FPER++ C	FPAR++ C	FPER++	FPAR++
-.000	.15790	.14828	-.02754	-.04158	.13036	.10670	.12961	.08162	-.02472	-.02515	.10488	.05647
-.020	.12565	.12411	-.02587	-.03975	.09978	.08436	.10608	.06589	-.02407	-.02336	.08202	.04254
-.040	.09986	.10375	-.02430	-.03800	.07556	.06574	.08682	.05319	-.02340	-.02168	.06342	.03152
-.060	.07925	.08662	-.02282	-.03633	.05644	.05028	.07105	.04293	-.02273	-.02009	.04832	.02284
-.080	.06281	.07223	-.02142	-.03474	.04139	.03750	.05815	.03465	-.02206	-.01860	.03609	.01605
-.100	.04971	.06017	-.02011	-.03321	.02960	.02696	.04758	.02796	-.02139	-.01720	.02619	.01075
-.120	.03928	.05006	-.01887	-.03175	.02041	.01832	.03893	.02255	-.02073	-.01589	.01821	.00667
-.140	.03098	.04161	-.01771	-.03035	.01328	.01127	.03186	.01819	-.02007	-.01465	.01179	.00354
-.160	.02440	.03456	-.01661	-.02901	.00779	.00554	.02607	.01467	-.01941	-.01349	.00666	.00118
-.180	.01917	.02867	-.01558	-.02774	.00359	.00093	.02133	.01183	-.01876	-.01241	.00256	-.00057
-.200	.01504	.02376	-.01461	-.02651	.00043	-.00275	.01745	.00954	-.01812	-.01139	-.00068	-.00185
-.220	.01177	.01968	-.01370	-.02535	-.00193	-.00567	.01427	.00769	-.01750	-.01044	-.00322	-.00275
-.240	.00919	.01628	-.01284	-.02423	-.00365	-.00795	.01168	.00620	-.01688	-.00954	-.00520	-.00335
-.260	.00715	.01346	-.01203	-.02316	-.00487	-.00970	.00955	.00500	-.01627	-.00871	-.00672	-.00371
-.280	.00555	.01112	-.01127	-.02214	-.00571	-.01103	.00781	.00403	-.01568	-.00793	-.00786	-.00391
-.300	.00430	.00918	-.01055	-.02117	-.00625	-.01199	.00639	.00324	-.01509	-.00720	-.00870	-.00396
-.320	.00331	.00757	-.00988	-.02024	-.00656	-.01267	.00523	.00261	-.01452	-.00652	-.00930	-.00391
-.340	.00254	.00624	-.00924	-.01934	-.00670	-.01311	.00427	.00210	-.01397	-.00589	-.00970	-.00379
-.360	.00195	.00514	-.00865	-.01849	-.00670	-.01336	.00349	.00169	-.01343	-.00530	-.00993	-.00361
-.380	.00148	.00423	-.00809	-.01768	-.00661	-.01345	.00286	.00136	-.01290	-.00475	-.01004	-.00339
-.400	.00112	.00347	-.00756	-.01690	-.00644	-.01342	.00234	.00110	-.01239	-.00424	-.01005	-.00314
-.420	.00084	.00286	-.00707	-.01616	-.00622	-.01330	.00191	.00088	-.01189	-.00377	-.00998	-.00288
-.440	.00063	.00234	-.00660	-.01544	-.00597	-.01310	.00156	.00071	-.01140	-.00333	-.00984	-.00262
-.460	.00046	.00192	-.00616	-.01476	-.00570	-.01284	.00128	.00057	-.01093	-.00292	-.00965	-.00235
-.480	.00034	.00158	-.00575	-.01411	-.00541	-.01254	.00104	.00046	-.01047	-.00254	-.00943	-.00208
-.500	.00024	.00129	-.00537	-.01348	-.00512	-.01220	.00085	.00037	-.01003	-.00219	-.00918	-.00182
-.520	.00017	.00106	-.00500	-.01290	-.00483	-.01184	.00070	.00030	-.00960	-.00187	-.00891	-.00157
-.540	.00012	.00087	-.00466	-.01233	-.00455	-.01146	.00057	.00024	-.00919	-.00157	-.00862	-.00133
-.560	.00008	.00071	-.00434	-.01179	-.00427	-.01108	.00047	.00019	-.00879	-.00129	-.00832	-.00110
-.580	.00005	.00058	-.00404	-.01127	-.00399	-.01069	.00038	.00015	-.00840	-.00104	-.00802	-.00089
-.600	.00003	.00047	-.00376	-.01077	-.00373	-.01030	.00031	.00012	-.00803	-.00081	-.00772	-.00068
-.620	.00001	.00039	-.00350	-.01030	-.00348	-.00991	.00025	.00010	-.00767	-.00060	-.00741	-.00050
-.640	.00000	.00032	-.00325	-.00985	-.00325	-.00953	.00021	.00008	-.00732	-.00040	-.00711	-.00032
-.660	-.00000	.00026	-.00302	-.00941	-.00302	-.00916	.00017	.00006	-.00699	-.00022	-.00682	-.00016
-.680	-.00001	.00021	-.00280	-.00900	-.00281	-.00879	.00014	.00005	-.00666	-.00006	-.00652	-.00001
-.700	-.00001	.00017	-.00259	-.00860	-.00261	-.00843	.00011	.00004	-.00635	.00009	-.00624	.00013
-.720	-.00001	.00014	-.00240	-.00823	-.00242	-.00809	.00009	.00003	-.00606	.00022	-.00596	.00025
-.740	-.00001	.00011	-.00222	-.00786	-.00224	-.00775	.00008	.00003	-.00577	.00034	-.00569	.00037
-.760	-.00001	.00009	-.00206	-.00752	-.00207	-.00743	.00006	.00002	-.00549	.00045	-.00543	.00047
-.780	-.00001	.00007	-.00190	-.00719	-.00191	-.00711	.00005	.00002	-.00523	.00055	-.00518	.00057
-.800	-.00001	.00006	-.00175	-.00687	-.00176	-.00681	.00004	.00001	-.00497	.00064	-.00493	.00065
-.820	-.00001	.00005	-.00161	-.00657	-.00162	-.00652	.00003	.00001	-.00473	.00071	-.00470	.00072
-.840	-.00001	.00004	-.00148	-.00628	-.00149	-.00624	.00003	.00001	-.00450	.00078	-.00447	.00079
-.860	-.00001	.00003	-.00136	-.00601	-.00137	-.00597	.00002	.00001	-.00427	.00084	-.00425	.00085
-.880	-.00001	.00003	-.00125	-.00574	-.00126	-.00572	.00002	.00001	-.00406	.00090	-.00404	.00090
-.900	-.00001	.00002	-.00114	-.00549	-.00115	-.00547	.00002	.00000	-.00385	.00094	-.00384	.00095
-.920	-.00001	.00002	-.00104	-.00525	-.00105	-.00523	.00001	.00000	-.00365	.00098	-.00364	.00099
-.940	-.00001	.00001	-.00095	-.00502	-.00096	-.00501	.00001	.00000	-.00347	.00102	-.00346	.00102
-.960	-.00000	.00001	-.00087	-.00480	-.00087	-.00479	.00001	.00000	-.00329	.00104	-.00328	.00105
-.980	-.00000	.00001	-.00079	-.00459	-.00079	-.00458	.00001	.00000	-.00311	.00107	-.00311	.00107
-1.000	-.00000	.00001	-.00071	-.00439	-.00071	-.00438	.00001	.00000	-.00295	.00109	-.00294	.00109
-1.020	-.00000	.00001	-.00064	-.00420	-.00064	-.00419	.00000	.00000	-.00279	.00110	-.00279	.00110
-1.040	-.00000	.00000	-.00058	-.00401	-.00058	-.00401	.00000	.00000	-.00264	.00111	-.00264	.00111
-1.060	-.00000	.00000	-.00052	-.00384	-.00052	-.00383	.00000	.00000	-.00250	.00112	-.00250	.00112
-1.080	-.00000	.00000	-.00046	-.00367	-.00046	-.00367	.00000	.00000	-.00236	.00112	-.00236	.00112
-1.100	-.00000	.00000	-.00041	-.00351	-.00041	-.00351	.00000	.00000	-.00223	.00112	-.00223	.00112
-1.120	-.00000	.00000	-.00036	-.00335	-.00036	-.00335	.00000	.00000	-.00211	.00112	-.00211	.00112
-1.140	-.00000	.00000	-.00031	-.00321	-.00031	-.00321	.00000	.00000	-.00199	.00111	-.00199	.00111
-1.160	-.00000	.00000	-.00027	-.00307	-.00027	-.00307	.00000	.00000	-.00188	.00110	-.00188	.00110
-1.180	-.00000	.00000	-.00023	-.00293	-.00023	-.00293	.00000	.00000	-.00177	.00109	-.00177	.00109
-1.200	-.00000	.00000	-.00020	-.00280	-.00020	-.00280	.00000	.00000	-.00167	.00108	-.00167	.00108
-1.220	-.00000	.00000	-.00016	-.00268	-.00016	-.00268	.00000	.00000	-.00157	.00107	-.00157	.00107
-1.240	-.00000	.00000	-.00013	-.00256	-.00013	-.00256	.00000	.00000	-.00148	.00106	-.00148	.00106
-1.260	-.00000	.00000	-.00010	-.00245	-.00010	-.00245	.00000	.00000	-.00139	.00104	-.00139	.00104
-1.280	-.00000	.00000	-.00008	-.00235	-.00008	-.00235	.00000	.00000	-.00131	.00102	-.00131	.00102
-1.300	-.00000	.00000	-.00005	-.00224	-.00005	-.00224	.00000	.00000	-.00123	.00101	-.00123	.00101
-1.320	-.00000	.00000	-.00003	-.00215	-.00003	-.00215	.00000	.00000	-.00115	.00099	-.00115	.00099
-1.340	-.00000	.00000	-.00001	-.00205	-.00001	-.00205	.00000	.00000	-.00108	.00097	-.00108	.00097
-1.360	-.00000	.00000	.00001	-.00196	.00001	-.00196	.00000	.00000	-.00101	.00095	-.00101	.00095
-1.380	-.00000	.00000	.00003	-.00188	.00003	-.00188	.00000	.00000	-.00095	.00093	-.00095	.00093
-1.400	-.00000	.00000	.00004	-.00179	.00004	-.00179	.00000	.00000	-.00089	.00091	-.00089	.00091
-1.420	-.00000	.00000	.00006	-.00172	.00006	-.00172	.00000	.00000	-.00083	.00089	-.00083	.00089
-1.440	-.00000	.00000	.00007	-.00164	.00007	-.00164	.00000	.00000	-.00078	.00086	-.00078	.00086
-1.460	-.00000	.00000	.00008	-.00157	.00008	-.00157	.00000	.00000	-.00072	.00084	-.00072	.00084
-1.480	-.00000	.00000	.00009	-.00150	.00009	-.00150	.00000	.00000	-.00067	.00082	-.00067	.00082
-1.500	-.00000	.00000	.00010	-.00144	.00010	-.00144	.00000	.00000	-.00063	.00080	-.00063	.00080
-1.520	-.00000	.00000	.00011	-.00137	.00011	-.00137	.00000	.00000	-.00058	.00078	-.00058	.00078
-1.540	-.00000	.00000	.00012	-.00131	.00012	-.00131	.00000	.00000	-.00054	.00076	-.00054	.00076
-1.560	-.00000	.00000	.00013	-.00126	.00013	-.00126	.00000	.00000	-.00050	.00074	-.00050	.00074
-1.580	-.00000	.00000	.00013	-.00120	.00013	-.00120	.00000	.00000	-.00047	.00072	-.00047	.00072
-1.600	-.00000	.00000	.00014	-.00115	.00014	-.00115	.00000	.00000	-.00043	.00069	-.00043	.00069
-1.620	-.00000	.00000	.00014	-.00110	.00014	-.00110	.00000	.00000	-.00040	.00067	-.00040	.00067
-1.640	-.00000	.00000	.00015	-.00105	.00015	-.00105	.00000	.00000	-.00037	.00065	-.00037	.00065
-1.660	-.00000	.00000	.00015	-.00101	.00015	-.00101	.00000	.00000	-.00034	.00063	-.00034	.00063
-1.680	-.00000	.00000	.00016	-.00096	.00016	-.00096	.00000	.00000	-.00031	.00061	-.00031	.00061
-1.700	-.00000	.00000	.00016	-.00092	.00016	-.00092	.00000	.00000	-.00029	.00059	-.00029	.00059
-1.720	-.00000	.00000	.00016	-.00088	.00016	-.00088	.00000	.00000	-.00026	.00058	-.00026	.00058
-1.740	-.00000	.00000	.00016	-.00084	.00016	-.00084	.00000	.00000	-.00024	.00056	-.00024	.00056
-1.760	-.00000	.00000	.00016	-.00080	.00016	-.00080	.00000	.00000	-.00022	.00054	-.00022	.00054
-1.780	-.00000	.00000	.00016	-.00077	.00016	-.00077	.00000	.00000	-.00020	.00052	-.00020	.00052
-1.800	-.00000	.00000	.00017	-.00074	.00017	-.00074	.00000	.00000	-.00018	.00050	-.00018	.00050
-1.820	-.00000	.00000	.00017	-.00070	.00017	-.00070	.00000	.00000	-.00016	.00049	-.00016	.00049
-1.840	-.00000	.00000	.00017	-.00067	.00017	-.00067	.00000	-.00000	-.00015	.00047	-.00015	.00047
-1.860	-.00000	.00000	.00017	-.00064	.00017	-.00064	.00000	-.00000	-.00013	.00045	-.00013	.00045
-1.880	-.00000	.00000	.00016	-.00062	.00016	-.00062	.00000	-.00000	-.00011	.00044	-.00011	.00044
-1.900	-.00000	-.00000	.00016	-.00059	.00016	-.00059	.00000	-.00000	-.00010	.00042	-.00010	.00042
-1.920	-.00000	-.00000	.00016	-.00056	.00016	-.00056	.00000	-.00000	-.00009	.00041	-.00009	.00041
-1.940	-.00000	-.00000	.00016	-.00054	.00016	-.00054	.00000	-.00000	-.00008	.00039	-.00008	.00039
-1.960	-.00000	-.00000	.00016	-.00052	.00016	-.00052	.00000	-.00000	-.00007	.00038	-.00007	.00038
-1.980	-.00000	-.00000	.00016	-.00049	.00016	-.00049	.00000	-.00000	-.00006	.00036	-.00006	.00036
-2.000	-.00000	-.00000	.00016	-.00047	.00016	-.00047	.00000	-.00000	-.00005	.00035	-.00005	.00035

xxxxx PI- P —> PIO N PLAB = 100.70 TMIN = .0000
KINEMATICS 0 ELAB = 100.70, S = 189.81, W = 13.78, K = 6.86, E1 = 6.86, E2 = 6.92, E3 = 6.86, E4 = 6.92, Q = 6.86

xxxxx FLIP AMPLITUDES AT A SERIES OF VALUES OF T xxxxx

T	PHI+— (POLE) REAL	PHI+— (POLE) IMAG	PHI+— (CUT) REAL	PHI+— (CUT) IMAG	PHI+— REAL	PHI+— IMAG	FPER+— P	FPAR+— P	FPER+— C	FPAR+— C	FPER+—	FPAR+—
-.000	.00006	.00006	-.00000	-.00000	.00006	.00006	.00005	.00003	-.00000	-.00000	.00005	.00003
-.020	.07749	.07654	-.00180	-.00197	.07569	.07457	.06542	.04064	-.00155	-.00108	.06387	.03956
-.040	.09242	.09602	-.00233	-.00260	.09008	.09342	.08035	.04923	-.00206	-.00136	.07829	.04787
-.060	.09523	.10407	-.00262	-.00297	.09260	.10110	.08537	.05159	-.00237	-.00149	.08300	.05009
-.080	.09227	.10611	-.00278	-.00320	.08949	.10291	.08542	.05090	-.00258	-.00153	.08284	.04936
-.100	.08634	.10449	-.00286	-.00334	.08348	.10116	.08264	.04855	-.00271	-.00153	.07993	.04703
-.120	.07892	.10059	-.00288	-.00342	.07604	.09717	.07823	.04532	-.00279	-.00149	.07544	.04383
-.140	.07091	.09523	-.00286	-.00345	.06805	.09179	.07290	.04164	-.00283	-.00142	.07008	.04021
-.160	.06284	.08901	-.00281	-.00344	.06003	.08557	.06714	.03780	-.00284	-.00135	.06430	.03645
-.180	.05506	.08233	-.00275	-.00342	.05232	.07892	.06124	.03398	-.00283	-.00126	.05841	.03272
-.200	.04776	.07547	-.00266	-.00337	.04510	.07210	.05541	.03030	-.00280	-.00117	.05261	.02913
-.220	.04104	.06863	-.00257	-.00330	.03847	.06533	.04978	.02682	-.00276	-.00108	.04702	.02575
-.240	.03496	.06197	-.00247	-.00323	.03249	.05874	.04443	.02359	-.00270	-.00098	.04173	.02261
-.260	.02953	.05557	-.00237	-.00315	.02716	.05242	.03943	.02063	-.00264	-.00089	.03679	.01974
-.280	.02473	.04952	-.00227	-.00306	.02246	.04646	.03479	.01793	-.00257	-.00080	.03222	.01713
-.300	.02053	.04384	-.00216	-.00296	.01837	.04088	.03052	.01549	-.00250	-.00071	.02803	.01478
-.320	.01689	.03857	-.00206	-.00287	.01483	.03570	.02663	.01331	-.00242	-.00063	.02422	.01268
-.340	.01376	.03372	-.00196	-.00277	.01180	.03094	.02310	.01137	-.00234	-.00055	.02077	.01082
-.360	.01109	.02927	-.00186	-.00267	.00923	.02660	.01992	.00965	-.00225	-.00047	.01767	.00918
-.380	.00884	.02524	-.00176	-.00258	.00708	.02266	.01707	.00814	-.00217	-.00040	.01490	.00774
-.400	.00695	.02159	-.00167	-.00248	.00529	.01911	.01452	.00681	-.00209	-.00033	.01243	.00648
-.420	.00539	.01831	-.00158	-.00238	.00382	.01593	.01225	.00566	-.00200	-.00027	.01025	.00539
-.440	.00411	.01538	-.00149	-.00229	.00262	.01309	.01025	.00466	-.00192	-.00021	.00833	.00444
-.460	.00307	.01278	-.00140	-.00220	.00167	.01058	.00848	.00379	-.00184	-.00016	.00665	.00363
-.480	.00224	.01048	-.00132	-.00211	.00092	.00837	.00693	.00305	-.00176	-.00011	.00518	.00294
-.500	.00158	.00845	-.00125	-.00202	.00034	.00643	.00558	.00241	-.00168	-.00007	.00390	.00235
-.520	.00108	.00668	-.00117	-.00194	-.00009	.00475	.00441	.00187	-.00160	-.00003	.00281	.00185
-.540	.00070	.00515	-.00110	-.00185	-.00041	.00329	.00339	.00142	-.00153	.00001	.00186	.00143
-.560	.00042	.00382	-.00104	-.00177	-.00062	.00205	.00251	.00103	-.00145	.00004	.00106	.00108
-.580	.00023	.00268	-.00098	-.00170	-.00075	.00098	.00176	.00071	-.00138	.00008	.00038	.00079
-.600	.00010	.00171	-.00092	-.00162	-.00081	.00009	.00113	.00045	-.00131	.00010	-.00019	.00055
-.620	.00003	.00089	-.00086	-.00155	-.00083	-.00066	.00059	.00023	-.00125	.00013	-.00066	.00036
-.640	.00000	.00020	-.00081	-.00148	-.00080	-.00127	.00013	.00005	-.00118	.00015	-.00105	.00020
-.660	.00001	-.00036	-.00076	-.00141	-.00075	-.00177	-.00024	-.00009	-.00112	.00017	-.00136	.00008
-.680	.00003	-.00083	-.00071	-.00135	-.00067	-.00217	-.00055	-.00020	-.00106	.00019	-.00161	-.00002
-.700	.00008	-.00120	-.00066	-.00129	-.00058	-.00248	-.00080	-.00029	-.00100	.00020	-.00180	-.00009
-.720	.00014	-.00149	-.00062	-.00123	-.00048	-.00272	-.00100	-.00035	-.00095	.00021	-.00195	-.00014
-.740	.00020	-.00171	-.00058	-.00117	-.00038	-.00288	-.00115	-.00040	-.00090	.00022	-.00205	-.00018
-.760	.00027	-.00188	-.00054	-.00111	-.00027	-.00299	-.00127	-.00043	-.00084	.00023	-.00212	-.00020
-.780	.00034	-.00199	-.00051	-.00106	-.00017	-.00306	-.00136	-.00045	-.00080	.00024	-.00215	-.00021
-.800	.00040	-.00207	-.00047	-.00101	-.00007	-.00308	-.00142	-.00046	-.00075	.00024	-.00217	-.00022
-.820	.00047	-.00210	-.00044	-.00096	.00003	-.00306	-.00145	-.00046	-.00071	.00025	-.00216	-.00021
-.840	.00053	-.00211	-.00041	-.00092	.00011	-.00302	-.00147	-.00046	-.00066	.00025	-.00213	-.00021
-.860	.00058	-.00209	-.00038	-.00087	.00019	-.00296	-.00147	-.00045	-.00062	.00025	-.00209	-.00019
-.880	.00062	-.00205	-.00036	-.00083	.00026	-.00288	-.00145	-.00044	-.00059	.00026	-.00204	-.00018
-.900	.00066	-.00200	-.00033	-.00079	.00033	-.00279	-.00143	-.00042	-.00055	.00025	-.00198	-.00016
-.920	.00069	-.00193	-.00031	-.00075	.00038	-.00268	-.00139	-.00040	-.00051	.00025	-.00191	-.00015
-.940	.00072	-.00185	-.00029	-.00071	.00043	-.00257	-.00135	-.00038	-.00048	.00025	-.00184	-.00013
-.960	.00074	-.00177	-.00027	-.00068	.00047	-.00245	-.00131	-.00036	-.00045	.00025	-.00176	-.00011
-.980	.00075	-.00168	-.00025	-.00064	.00050	-.00233	-.00126	-.00034	-.00042	.00025	-.00168	-.00009
-1.000	.00076	-.00159	-.00023	-.00061	.00053	-.00220	-.00121	-.00031	-.00039	.00024	-.00160	-.00007
-1.020	.00076	-.00150	-.00021	-.00058	.00055	-.00208	-.00115	-.00029	-.00037	.00024	-.00152	-.00005
-1.040	.00076	-.00141	-.00020	-.00055	.00056	-.00196	-.00110	-.00027	-.00034	.00023	-.00144	-.00004
-1.060	.00076	-.00131	-.00018	-.00052	.00057	-.00184	-.00104	-.00025	-.00032	.00023	-.00136	-.00002
-1.080	.00075	-.00123	-.00017	-.00049	.00058	-.00172	-.00099	-.00023	-.00029	.00022	-.00128	-.00001
-1.100	.00073	-.00114	-.00016	-.00047	.00058	-.00161	-.00093	-.00021	-.00027	.00022	-.00121	.00001
-1.120	.00072	-.00105	-.00015	-.00044	.00057	-.00150	-.00088	-.00019	-.00025	.00021	-.00113	.00002
-1.140	.00070	-.00097	-.00013	-.00042	.00056	-.00139	-.00083	-.00018	-.00023	.00021	-.00106	.00003
-1.160	.00068	-.00090	-.00012	-.00040	.00055	-.00129	-.00078	-.00016	-.00022	.00020	-.00098	.00004
-1.180	.00066	-.00082	-.00011	-.00038	.00054	-.00120	-.00073	-.00015	-.00020	.00019	-.00093	.00005
-1.200	.00063	-.00075	-.00011	-.00036	.00053	-.00111	-.00068	-.00013	-.00018	.00019	-.00087	.00005
-1.220	.00061	-.00069	-.00010	-.00034	.00051	-.00103	-.00064	-.00012	-.00017	.00018	-.00081	.00006
-1.240	.00058	-.00063	-.00009	-.00032	.00049	-.00095	-.00060	-.00011	-.00016	.00017	-.00075	.00007
-1.260	.00056	-.00057	-.00008	-.00030	.00048	-.00087	-.00056	-.00010	-.00014	.00017	-.00070	.00007
-1.280	.00053	-.00052	-.00008	-.00028	.00046	-.00080	-.00052	-.00009	-.00013	.00016	-.00065	.00007
-1.300	.00051	-.00047	-.00007	-.00027	.00044	-.00074	-.00048	-.00008	-.00012	.00016	-.00060	.00008
-1.320	.00048	-.00042	-.00006	-.00025	.00042	-.00068	-.00045	-.00007	-.00011	.00015	-.00056	.00008
-1.340	.00046	-.00038	-.00006	-.00024	.00040	-.00062	-.00041	-.00006	-.00010	.00014	-.00051	.00008
-1.360	.00043	-.00034	-.00005	-.00023	.00038	-.00057	-.00038	-.00006	-.00009	.00014	-.00047	.00008
-1.380	.00041	-.00031	-.00005	-.00021	.00036	-.00052	-.00036	-.00005	-.00008	.00013	-.00044	.00008
-1.400	.00038	-.00027	-.00004	-.00020	.00034	-.00047	-.00033	-.00004	-.00007	.00013	-.00040	.00008
-1.420	.00036	-.00024	-.00004	-.00019	.00032	-.00043	-.00031	-.00004	-.00007	.00012	-.00037	.00008
-1.440	.00034	-.00022	-.00004	-.00018	.00030	-.00039	-.00028	-.00003	-.00006	.00011	-.00034	.00008
-1.460	.00032	-.00019	-.00003	-.00017	.00028	-.00036	-.00026	-.00003	-.00005	.00011	-.00031	.00008
-1.480	.00030	-.00017	-.00003	-.00016	.00027	-.00033	-.00024	-.00003	-.00005	.00010	-.00029	.00008
-1.500	.00028	-.00015	-.00003	-.00015	.00025	-.00030	-.00022	-.00002	-.00004	.00010	-.00026	.00008
-1.520	.00026	-.00013	-.00002	-.00014	.00023	-.00027	-.00020	-.00002	-.00004	.00009	-.00024	.00007
-1.540	.00024	-.00011	-.00002	-.00013	.00022	-.00024	-.00019	-.00002	-.00003	.00009	-.00022	.00007
-1.560	.00022	-.00010	-.00002	-.00012	.00020	-.00022	-.00017	-.00001	-.00003	.00008	-.00020	.00007
-1.580	.00021	-.00009	-.00002	-.00012	.00019	-.00020	-.00016	-.00001	-.00003	.00008	-.00018	.00007
-1.600	.00019	-.00007	-.00002	-.00011	.00018	-.00018	-.00015	-.00001	-.00002	.00007	-.00017	.00006
-1.620	.00018	-.00006	-.00001	-.00010	.00016	-.00016	-.00013	-.00001	-.00002	.00007	-.00015	.00006
-1.640	.00017	-.00005	-.00001	-.00009	.00015	-.00015	-.00012	-.00001	-.00002	.00007	-.00014	.00006
-1.660	.00015	-.00005	-.00001	-.00009	.00014	-.00013	-.00011	-.00001	-.00001	.00006	-.00013	.00006
-1.680	.00014	-.00004	-.00001	-.00008	.00013	-.00012	-.00010	-.00000	-.00001	.00006	-.00011	.00005
-1.700	.00013	-.00003	-.00001	-.00008	.00012	-.00011	-.00009	-.00000	-.00001	.00005	-.00010	.00005
-1.720	.00012	-.00003	-.00001	-.00007	.00011	-.00010	-.00009	-.00000	-.00001	.00005	-.00009	.00005
-1.740	.00011	-.00002	-.00001	-.00007	.00010	-.00009	-.00008	-.00000	-.00001	.00005	-.00008	.00005
-1.760	.00010	-.00002	-.00001	-.00006	.00010	-.00008	-.00007	-.00000	-.00000	.00004	-.00008	.00004
-1.780	.00009	-.00001	-.00001	-.00006	.00009	-.00007	-.00007	-.00000	-.00000	.00004	-.00007	.00004
-1.800	.00009	-.00001	-.00001	-.00005	.00008	-.00006	-.00006	-.00000	-.00000	.00004	-.00006	.00004
-1.820	.00008	-.00001	-.00000	-.00005	.00007	-.00006	-.00006	-.00000	-.00000	.00004	-.00006	.00004
-1.840	.00007	-.00000	-.00000	-.00005	.00007	-.00005	-.00005	.00000	.00000	.00003	-.00005	.00003
-1.860	.00007	-.00000	-.00000	-.00004	.00006	-.00005	-.00005	.00000	.00000	.00003	-.00005	.00003
-1.880	.00006	-.00000	-.00000	-.00004	.00006	-.00004	-.00004	.00000	.00000	.00003	-.00004	.00003
-1.900	.00005	.00000	-.00000	-.00004	.00005	-.00004	-.00004	.00000	.00000	.00003	-.00004	.00003
-1.920	.00005	.00000	-.00000	-.00004	.00005	-.00003	-.00004	.00000	.00000	.00002	-.00003	.00003
-1.940	.00005	.00000	-.00000	-.00003	.00004	-.00003	-.00003	.00000	.00000	.00002	-.00003	.00002
-1.960	.00004	.00000	-.00000	-.00003	.00004	-.00003	-.00003	.00000	.00000	.00002	-.00003	.00002
-1.980	.00004	.00000	-.00000	-.00003	.00004	-.00002	-.00003	.00000	.00000	.00002	-.00002	.00002
-2.000	.00003	.00000	-.00000	-.00003	.00003	-.00002	-.00002	.00000	.00000	.00002	-.00002	.00002

xxxxx PI- P —> PIO N PLAB = 100.70 TMIN = .0000

KINEMATICS 0 ELAB = 100.70, S = 189.81, W = 13.78, K = 6.86, E1 = 6.86, E2 = 6.92, E3 = 6.86, E4 = 6.92, Q = 6.86

T	DS/DT	P	R	A
-.000000	.028378	.000068	-.001083	.999999
-.020000	.028361	.074420	-.988819	.129224
-.040000	.026873	.084578	-.930993	-.355104
-.060000	.024511	.085660	-.764304	-.639142
-.080000	.021717	.083267	-.581300	-.809417
-.100000	.018804	.079135	-.405904	-.910483
-.120000	.015976	.073878	-.244019	-.966952
-.140000	.013358	.067678	-.095929	-.993085
-.160000	.011017	.060524	.039831	-.997372
-.180000	.008979	.052300	.165110	-.984887
-.200000	.007240	.042826	.281635	-.958565
-.220000	.005784	.031873	.390807	-.919921
-.240000	.004582	.019176	.493601	-.869477
-.260000	.003604	.004448	.590493	-.807031
-.280000	.002817	-.012608	.681355	-.731844
-.300000	.002191	-.032267	.765345	-.642811
-.320000	.001698	-.054735	.840743	-.538660
-.340000	.001314	-.080074	.904804	-.418233
-.360000	.001016	-.108100	.953631	-.280897
-.380000	.000788	-.138249	.982206	-.127116
-.400000	.000615	-.169435	.984694	.040856
-.420000	.000484	-.199950	.955183	.218277
-.440000	.000386	-.227487	.888944	.397527
-.460000	.000312	-.249356	.784049	.568409
-.480000	.000257	-.262946	.642840	.719455
-.500000	.000217	-.266316	.472508	.840126
-.520000	.000186	-.258701	.284221	.923197
-.540000	.000163	-.240705	.090926	.966330
-.560000	.000146	-.214071	-.095295	.972159
-.580000	.000132	-.181186	-.265274	.946996
-.600000	.000121	-.144529	-.413596	.898916
-.620000	.000112	-.106267	-.538324	.836011
-.640000	.000104	-.068064	-.640105	.765267
-.660000	.000097	-.031055	-.721143	.692090
-.680000	.000090	.004076	-.784348	.620307
-.700000	.000084	.036984	-.832758	.552400
-.720000	.000079	.067555	-.869201	.489823
-.740000	.000074	.095820	-.896143	.433297
-.760000	.000068	.121892	-.915649	.383052
-.780000	.000064	.145822	-.929398	.339008
-.800000	.000059	.168074	-.938727	.300902
-.820000	.000055	.188505	-.944692	.268371
-.840000	.000050	.207364	-.948111	.241009
-.860000	.000046	.224780	-.949618	.218400
-.880000	.000043	.240865	-.949699	.200139
-.900000	.000039	.255713	-.948722	.185840
-.920000	.000036	.269404	-.946966	.175147
-.940000	.000033	.282000	-.944639	.167729
-.960000	.000030	.293555	-.941894	.163282
-.980000	.000027	.304110	-.938843	.161528
-1.000000	.000025	.313698	-.935565	.162212
-1.020000	.000023	.322344	-.932114	.165100
-1.040000	.000021	.330070	-.928527	.169975
-1.060000	.000019	.336891	-.924826	.176638
-1.080000	.000017	.342823	-.921023	.184903
-1.100000	.000015	.347878	-.917122	.194596
-1.120000	.000014	.352067	-.913124	.205554
-1.140000	.000013	.355403	-.909026	.217626
-1.160000	.000011	.357898	-.904821	.230667
-1.180000	.000010	.359567	-.900506	.244541
-1.200000	.000009	.360427	-.896074	.259121
-1.220000	.000009	.360496	-.891521	.274286
-1.240000	.000008	.359794	-.886844	.289922
-1.260000	.000007	.358347	-.882042	.305923
-1.280000	.000006	.356181	-.877115	.322188
-1.300000	.000006	.353324	-.872065	.338623
-1.320000	.000005	.349809	-.866895	.355142
-1.340000	.000005	.345670	-.861614	.371664
-1.360000	.000004	.340944	-.856227	.388115
-1.380000	.000004	.335667	-.850744	.404428
-1.400000	.000004	.329880	-.845176	.420543
-1.420000	.000003	.323624	-.839535	.436404
-1.440000	.000003	.316941	-.833833	.451964
-1.460000	.000003	.309873	-.828083	.467180
-1.480000	.000002	.302462	-.822300	.482016
-1.500000	.000002	.294750	-.816497	.496442
-1.520000	.000002	.286779	-.810690	.510431
-1.540000	.000002	.278590	-.804891	.523964
-1.560000	.000002	.270223	-.799115	.537025
-1.580000	.000002	.261715	-.793374	.549602
-1.600000	.000001	.253105	-.787682	.561689
-1.620000	.000001	.244426	-.782051	.573282
-1.640000	.000001	.235713	-.776491	.584381
-1.660000	.000001	.226997	-.771014	.594988
-1.680000	.000001	.218307	-.765627	.605109
-1.700000	.000001	.209670	-.760341	.614752
-1.720000	.000001	.201111	-.755163	.623925
-1.740000	.000001	.192654	-.750099	.632642
-1.760000	.000001	.184319	-.745155	.640913
-1.780000	.000001	.176126	-.740337	.648754
-1.800000	.000001	.168090	-.735647	.656178
-1.820000	.000001	.160228	-.731089	.663202
-1.840000	.000000	.152551	-.726665	.669840
-1.860000	.000000	.145072	-.722377	.676110
-1.880000	.000000	.137800	-.718227	.682027
-1.900000	.000000	.130743	-.714214	.687608
-1.920000	.000000	.123908	-.710338	.692868
-1.940000	.000000	.117299	-.706599	.697825
-1.960000	.000000	.110922	-.702995	.702492
-1.980000	.000000	.104777	-.699524	.706886
-2.000000	.000000	.098868	-.696185	.711021

CROSS SECTION = .004387

xxxxx PI- P —> PIO N PLAB = 100.70 TMIN = .0000 xxxxx

FITS TO EXPERIMENTAL DATA

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76. CHISQ = 4574.43945

T VALUES	-.00200	-.00600	-.01200	-.02000	-.02800	-.04000	-.05600	-.07200	-.09000	-.11000	-.14000	-.18000	-.22000	-.26000	-.31000
THEORETICAL	.02846	.02857	.02858	.02836	.02791	.02687	.02503	.02286	.02026	.01737	.01336	.00898	.00578	.00360	.00193
EXPERIMENTAL	.02030	.02110	.02080	.02150	.02260	.02210	.02050	.01860	.01610	.01290	.00950	.00587	.00364	.00193	.00099
EXPT. ERRORS	.00080	.00080	.00070	.00070	.00070	.00060	.00060	.00050	.00040	.00040	.00020	.00017	.00013	.00009	.00005
CHI SQUAREDS	*********	87.17686	*********	96.06888	57.44263	63.28559	56.99928	72.71893	*********	*********	*********	*********	*********	*********	*********

T VALUES	-.37000	-.45000	-.55000	-.65000	-.75000	-.90000	-1.10000	-1.30000
THEORETICAL	.00089	.00035	.00015	.00010	.00007	.00004	.00002	.00001
EXPERIMENTAL	.00037	.00009	.00002	.00002	.00002	.00002	.00000	.00000
EXPT. ERRORS	.00003	.00001	.00001	.00000	.00001	.00000	.00000	.00000
CHI SQUAREDS	*********	*********	*********	*********	95.92810	57.99218	49.55923	8.35003

xxxxx PI- P —> PIO N PLAB = 150.20 TMIN = 0.0000
KINEMATICS 0 ELAB = 150.20, S = 282.67, W = 16.81, K = 8.38, E1 = 8.38, E2 = 8.43, E3 = 8.38, E4 = 8.43, Q = 8.38

xxxxx NONFLIP AMPLITUDES AT A SERIES OF VALUES OF T xxxxx

T	PHI++ (POLE) REAL	PHI++ (POLE) IMAG	PHI++ (CUT) REAL	PHI++ (CUT) IMAG	PHI++ REAL	PHI++ IMAG	FPER++ P	FPAR++ P	FPER++ C	FPAR++ C	FPER++	FPAR++
-.000	.13042	.12248	-.02222	-.03296	.10820	.08951	.10705	.06742	-.01987	-.01988	.08718	.04753
-.020	.10312	.10186	-.02085	-.03147	.08227	.07039	.08706	.05408	-.01931	-.01843	.06776	.03565
-.040	.08143	.08460	-.01956	-.03003	.06187	.05457	.07080	.04338	-.01873	-.01707	.05207	.02631
-.060	.06422	.07018	-.01834	-.02867	.04588	.04152	.05757	.03479	-.01816	-.01578	.03941	.01900
-.080	.05057	.05815	-.01720	-.02736	.03338	.03079	.04681	.02789	-.01759	-.01458	.02922	.01331
-.100	.03977	.04813	-.01612	-.02612	.02365	.02202	.03806	.02236	-.01703	-.01345	.02104	.00891
-.120	.03122	.03979	-.01511	-.02493	.01611	.01487	.03095	.01793	-.01647	-.01240	.01448	.00553
-.140	.02447	.03287	-.01416	-.02379	.01031	.00908	.02516	.01437	-.01591	-.01141	.00925	.00296
-.160	.01915	.02712	-.01327	-.02271	.00588	.00441	.02045	.01152	-.01536	-.01048	.00509	.00103
-.180	.01495	.02235	-.01243	-.02167	.00252	.00068	.01663	.00923	-.01482	-.00961	.00181	-.00039
-.200	.01165	.01841	-.01164	-.02068	.00001	-.00227	.01352	.00739	-.01429	-.00880	-.00077	-.00141
-.220	.00906	.01515	-.01090	-.01974	-.00184	-.00459	.01099	.00592	-.01377	-.00804	-.00278	-.00212
-.240	.00703	.01245	-.01020	-.01884	-.00317	-.00639	.00893	.00474	-.01325	-.00734	-.00432	-.00260
-.260	.00544	.01023	-.00955	-.01798	-.00411	-.00775	.00726	.00380	-.01275	-.00668	-.00549	-.00288
-.280	.00419	.00840	-.00893	-.01716	-.00474	-.00876	.00590	.00304	-.01226	-.00606	-.00636	-.00302
-.300	.00322	.00689	-.00835	-.01638	-.00513	-.00949	.00479	.00243	-.01178	-.00549	-.00699	-.00306
-.320	.00247	.00564	-.00781	-.01563	-.00534	-.00999	.00390	.00195	-.01132	-.00496	-.00742	-.00301
-.340	.00189	.00462	-.00730	-.01492	-.00542	-.01030	.00317	.00156	-.01086	-.00446	-.00770	-.00290
-.360	.00143	.00378	-.00682	-.01424	-.00539	-.01046	.00257	.00125	-.01042	-.00400	-.00785	-.00275
-.380	.00108	.00309	-.00637	-.01359	-.00529	-.01049	.00209	.00100	-.00999	-.00357	-.00790	-.00257
-.400	.00081	.00253	-.00595	-.01297	-.00514	-.01044	.00170	.00080	-.00958	-.00317	-.00788	-.00238
-.420	.00061	.00206	-.00556	-.01237	-.00495	-.01031	.00138	.00064	-.00917	-.00281	-.00779	-.00217
-.440	.00045	.00168	-.00519	-.01181	-.00474	-.01013	.00112	.00051	-.00878	-.00247	-.00766	-.00196
-.460	.00033	.00137	-.00484	-.01127	-.00451	-.00990	.00091	.00041	-.00840	-.00215	-.00749	-.00174
-.480	.00024	.00112	-.00451	-.01075	-.00427	-.00964	.00074	.00033	-.00803	-.00186	-.00729	-.00154
-.500	.00017	.00091	-.00420	-.01026	-.00403	-.00935	.00060	.00026	-.00768	-.00159	-.00708	-.00133
-.520	.00012	.00074	-.00392	-.00979	-.00380	-.00905	.00049	.00021	-.00734	-.00135	-.00685	-.00114
-.540	.00008	.00060	-.00365	-.00935	-.00357	-.00874	.00040	.00017	-.00701	-.00112	-.00661	-.00095
-.560	.00005	.00049	-.00340	-.00892	-.00334	-.00843	.00032	.00013	-.00669	-.00091	-.00636	-.00078
-.580	.00003	.00040	-.00316	-.00851	-.00312	-.00811	.00026	.00011	-.00638	-.00072	-.00612	-.00061
-.600	.00002	.00032	-.00294	-.00812	-.00292	-.00780	.00021	.00008	-.00608	-.00055	-.00587	-.00046
-.620	.00001	.00026	-.00273	-.00775	-.00272	-.00749	.00017	.00007	-.00580	-.00039	-.00563	-.00032
-.640	.00000	.00021	-.00253	-.00740	-.00253	-.00719	.00014	.00005	-.00552	-.00024	-.00538	-.00019
-.660	-.00000	.00017	-.00235	-.00706	-.00235	-.00689	.00011	.00004	-.00526	-.00011	-.00515	-.00007
-.680	-.00001	.00014	-.00218	-.00674	-.00219	-.00660	.00009	.00003	-.00501	.00001	-.00492	.00005
-.700	-.00001	.00011	-.00202	-.00643	-.00203	-.00632	.00007	.00003	-.00476	.00012	-.00469	.00015
-.720	-.00001	.00009	-.00187	-.00614	-.00188	-.00605	.00006	.00002	-.00453	.00022	-.00447	.00024
-.740	-.00001	.00007	-.00173	-.00586	-.00174	-.00578	.00005	.00002	-.00431	.00031	-.00426	.00032
-.760	-.00001	.00006	-.00160	-.00559	-.00161	-.00553	.00004	.00001	-.00409	.00038	-.00405	.00040
-.780	-.00001	.00005	-.00148	-.00533	-.00149	-.00529	.00003	.00001	-.00389	.00046	-.00385	.00047
-.800	-.00001	.00004	-.00136	-.00509	-.00137	-.00505	.00003	.00001	-.00369	.00052	-.00366	.00053
-.820	-.00001	.00003	-.00126	-.00486	-.00126	-.00483	.00002	.00001	-.00350	.00057	-.00348	.00058
-.840	-.00001	.00003	-.00116	-.00464	-.00116	-.00461	.00002	.00001	-.00332	.00062	-.00330	.00063
-.860	-.00001	.00002	-.00106	-.00442	-.00107	-.00440	.00001	.00000	-.00315	.00066	-.00313	.00067
-.880	-.00000	.00002	-.00098	-.00422	-.00098	-.00421	.00001	.00000	-.00298	.00070	-.00297	.00070
-.900	-.00000	.00001	-.00089	-.00403	-.00090	-.00402	.00001	.00000	-.00283	.00073	-.00282	.00073
-.920	-.00000	.00001	-.00082	-.00385	-.00082	-.00383	.00001	.00000	-.00267	.00076	-.00267	.00076
-.940	-.00000	.00001	-.00075	-.00367	-.00075	-.00366	.00001	.00000	-.00253	.00078	-.00252	.00078
-.960	-.00000	.00001	-.00068	-.00350	-.00068	-.00350	.00000	.00000	-.00239	.00080	-.00239	.00080
-.980	-.00000	.00001	-.00062	-.00334	-.00062	-.00334	.00000	.00000	-.00226	.00081	-.00226	.00081
-1.000	-.00000	.00000	-.00056	-.00319	-.00056	-.00319	.00000	.00000	-.00214	.00082	-.00214	.00082
-1.020	-.00000	.00000	-.00051	-.00304	-.00051	-.00304	.00000	.00000	-.00202	.00083	-.00202	.00083
-1.040	-.00000	.00000	-.00046	-.00291	-.00046	-.00290	.00000	.00000	-.00191	.00083	-.00190	.00083
-1.060	-.00000	.00000	-.00041	-.00277	-.00041	-.00277	.00000	.00000	-.00180	.00083	-.00180	.00083
-1.080	-.00000	.00000	-.00037	-.00265	-.00037	-.00264	.00000	.00000	-.00170	.00083	-.00169	.00083
-1.100	-.00000	.00000	-.00033	-.00253	-.00033	-.00252	.00000	.00000	-.00160	.00083	-.00160	.00083
-1.120	-.00000	.00000	-.00029	-.00241	-.00029	-.00241	.00000	.00000	-.00151	.00083	-.00150	.00083
-1.140	-.00000	.00000	-.00026	-.00230	-.00026	-.00230	.00000	.00000	-.00142	.00082	-.00142	.00082
-1.160	-.00000	.00000	-.00023	-.00220	-.00023	-.00220	.00000	.00000	-.00133	.00081	-.00133	.00081
-1.180	-.00000	.00000	-.00020	-.00210	-.00020	-.00210	.00000	.00000	-.00125	.00080	-.00125	.00080
-1.200	-.00000	.00000	-.00017	-.00200	-.00017	-.00200	.00000	.00000	-.00118	.00079	-.00118	.00079
-1.220	-.00000	.00000	-.00015	-.00191	-.00015	-.00191	.00000	.00000	-.00111	.00078	-.00111	.00078
-1.240	-.00000	.00000	-.00012	-.00182	-.00012	-.00182	.00000	.00000	-.00104	.00077	-.00104	.00077
-1.260	-.00000	.00000	-.00010	-.00174	-.00010	-.00174	.00000	.00000	-.00097	.00075	-.00097	.00075
-1.280	-.00000	.00000	-.00008	-.00166	-.00008	-.00166	.00000	.00000	-.00091	.00074	-.00091	.00074
-1.300	-.00000	.00000	-.00006	-.00158	-.00006	-.00158	.00000	.00000	-.00086	.00073	-.00085	.00073
-1.320	-.00000	.00000	-.00005	-.00151	-.00005	-.00151	.00000	.00000	-.00080	.00071	-.00080	.00071
-1.340	-.00000	.00000	-.00003	-.00144	-.00003	-.00144	.00000	.00000	-.00075	.00069	-.00075	.00069
-1.360	-.00000	.00000	-.00002	-.00138	-.00002	-.00138	.00000	.00000	-.00070	.00068	-.00070	.00068
-1.380	-.00000	.00000	-.00000	-.00131	-.00000	-.00131	.00000	.00000	-.00065	.00066	-.00065	.00066
-1.400	-.00000	.00000	.00001	-.00125	.00001	-.00125	.00000	.00000	-.00061	.00065	-.00061	.00065
-1.420	-.00000	.00000	.00002	-.00120	.00002	-.00120	.00000	.00000	-.00057	.00063	-.00057	.00063
-1.440	-.00000	.00000	.00003	-.00114	.00003	-.00114	.00000	.00000	-.00053	.00061	-.00053	.00061
-1.460	-.00000	.00000	.00004	-.00109	.00004	-.00109	.00000	.00000	-.00049	.00060	-.00049	.00060
-1.480	-.00000	.00000	.00004	-.00104	.00004	-.00104	.00000	.00000	-.00046	.00058	-.00046	.00058
-1.500	-.00000	.00000	.00005	-.00099	.00005	-.00099	.00000	.00000	-.00042	.00056	-.00042	.00056
-1.520	-.00000	.00000	.00006	-.00095	.00006	-.00095	.00000	.00000	-.00039	.00055	-.00039	.00055
-1.540	-.00000	.00000	.00006	-.00091	.00006	-.00091	.00000	.00000	-.00036	.00053	-.00036	.00053
-1.560	-.00000	.00000	.00007	-.00086	.00007	-.00086	.00000	.00000	-.00034	.00051	-.00034	.00051
-1.580	-.00000	.00000	.00007	-.00083	.00007	-.00083	.00000	.00000	-.00031	.00050	-.00031	.00050
-1.600	-.00000	.00000	.00008	-.00079	.00008	-.00079	.00000	.00000	-.00029	.00048	-.00029	.00048
-1.620	-.00000	.00000	.00008	-.00075	.00008	-.00075	.00000	.00000	-.00026	.00047	-.00026	.00047
-1.640	-.00000	.00000	.00009	-.00072	.00009	-.00072	.00000	.00000	-.00024	.00045	-.00024	.00045
-1.660	-.00000	.00000	.00009	-.00068	.00009	-.00068	.00000	.00000	-.00022	.00044	-.00022	.00044
-1.680	-.00000	.00000	.00009	-.00065	.00009	-.00065	.00000	.00000	-.00020	.00042	-.00020	.00042
-1.700	-.00000	.00000	.00009	-.00062	.00009	-.00062	.00000	.00000	-.00018	.00041	-.00018	.00041
-1.720	-.00000	.00000	.00009	-.00060	.00009	-.00060	.00000	.00000	-.00017	.00039	-.00017	.00039
-1.740	-.00000	.00000	.00010	-.00057	.00010	-.00057	.00000	.00000	-.00015	.00038	-.00015	.00038
-1.760	-.00000	.00000	.00010	-.00054	.00010	-.00054	.00000	.00000	-.00014	.00036	-.00014	.00036
-1.780	-.00000	.00000	.00010	-.00052	.00010	-.00052	.00000	.00000	-.00012	.00035	-.00012	.00035
-1.800	-.00000	.00000	.00010	-.00049	.00010	-.00049	.00000	.00000	-.00011	.00034	-.00011	.00034
-1.820	-.00000	.00000	.00010	-.00047	.00010	-.00047	.00000	.00000	-.00010	.00033	-.00010	.00033
-1.840	-.00000	.00000	.00010	-.00045	.00010	-.00045	.00000	-.00000	-.00009	.00031	-.00009	.00031
-1.860	-.00000	.00000	.00010	-.00043	.00010	-.00043	.00000	-.00000	-.00008	.00030	-.00008	.00030
-1.880	-.00000	.00000	.00010	-.00041	.00010	-.00041	.00000	-.00000	-.00007	.00029	-.00007	.00029
-1.900	-.00000	-.00000	.00010	-.00039	.00010	-.00039	.00000	-.00000	-.00006	.00028	-.00006	.00028
-1.920	-.00000	-.00000	.00010	-.00037	.00010	-.00037	.00000	-.00000	-.00005	.00027	-.00005	.00027
-1.940	-.00000	-.00000	.00010	-.00036	.00010	-.00036	.00000	-.00000	-.00004	.00026	-.00004	.00026
-1.960	-.00000	-.00000	.00010	-.00034	.00010	-.00034	.00000	-.00000	-.00004	.00025	-.00004	.00025
-1.980	-.00000	-.00000	.00009	-.00032	.00009	-.00032	.00000	-.00000	-.00003	.00024	-.00003	.00024
-2.000	-.00000	-.00000	.00009	-.00031	.00009	-.00031	.00000	-.00000	-.00002	.00023	-.00002	.00023

***** PI- P --> PI0 N   PLAB = 150.20   TMIN = 0.0000
KINEMATICS 0 ELAB = 150.20, S = 282.67, W = 16.81, K = 8.38, E1 = 8.38, E2 = 8.43, E3 = 8.38, E4 = 8.43, Q = 8.38

***** FLIP AMPLITUDES AT A SERIES OF VALUES OF T *****

T	PHI+- (POLE) REAL	PHI+- (POLE) IMAG	PHI+- (CUT) REAL	PHI+- (CUT) IMAG	PHI+- REAL	PHI+- IMAG	FPER+- P	FPAR+- P	FPER+- C	FPAR+- C	FPER+-	FPAR+-
-.000	.00005	.00005	-.00000	-.00000	.00005	.00005	.00004	.00003	-.00000	-.00000	.00004	.00003
-.020	.06360	.06282	-.00139	-.00151	.06220	.06130	.05369	.03335	-.00120	-.00083	.05250	.03253
-.040	.07537	.07830	-.00181	-.00199	.07356	.07631	.06553	.04015	-.00159	-.00104	.06394	.03910
-.060	.07716	.08433	-.00203	-.00227	.07513	.08205	.06918	.04180	-.00183	-.00114	.06735	.04066
-.080	.07429	.08543	-.00215	-.00245	.07214	.08298	.06877	.04098	-.00198	-.00117	.06679	.03981
-.100	.06907	.08359	-.00220	-.00255	.06686	.08104	.06611	.03884	-.00208	-.00116	.06403	.03768
-.120	.06273	.07995	-.00221	-.00260	.06051	.07735	.06218	.03602	-.00214	-.00113	.06004	.03489
-.140	.05600	.07521	-.00220	-.00262	.05381	.07259	.05758	.03288	-.00217	-.00108	.05541	.03180
-.160	.04932	.06985	-.00216	-.00262	.04716	.06724	.05269	.02966	-.00217	-.00102	.05052	.02864
-.180	.04294	.06420	-.00210	-.00259	.04083	.06160	.04775	.02650	-.00216	-.00095	.04559	.02555
-.200	.03700	.05847	-.00203	-.00255	.03497	.05592	.04293	.02348	-.00213	-.00088	.04080	.02260
-.220	.03160	.05283	-.00196	-.00250	.02963	.05033	.03832	.02065	-.00210	-.00081	.03622	.01984
-.240	.02674	.04740	-.00188	-.00244	.02486	.04496	.03399	.01805	-.00205	-.00074	.03194	.01731
-.260	.02244	.04223	-.00180	-.00237	.02064	.03986	.02997	.01568	-.00200	-.00066	.02797	.01501
-.280	.01867	.03739	-.00172	-.00230	.01695	.03509	.02627	.01354	-.00194	-.00059	.02433	.01294
-.300	.01540	.03290	-.00164	-.00223	.01376	.03067	.02290	.01162	-.00188	-.00053	.02102	.01110
-.320	.01259	.02876	-.00156	-.00215	.01103	.02660	.01986	.00992	-.00182	-.00046	.01804	.00946
-.340	.01019	.02498	-.00148	-.00208	.00871	.02290	.01712	.00842	-.00176	-.00040	.01536	.00802
-.360	.00816	.02155	-.00140	-.00200	.00676	.01955	.01466	.00710	-.00169	-.00035	.01297	.00676
-.380	.00646	.01846	-.00133	-.00192	.00514	.01653	.01248	.00595	-.00163	-.00029	.01086	.00566
-.400	.00505	.01569	-.00125	-.00185	.00380	.01384	.01055	.00495	-.00156	-.00024	.00899	.00471
-.420	.00389	.01322	-.00118	-.00178	.00271	.01145	.00885	.00409	-.00150	-.00020	.00735	.00389
-.440	.00295	.01104	-.00111	-.00170	.00183	.00933	.00735	.00334	-.00143	-.00016	.00592	.00319
-.460	.00219	.00911	-.00105	-.00163	.00114	.00748	.00605	.00270	-.00137	-.00012	.00468	.00259
-.480	.00159	.00742	-.00099	-.00156	.00060	.00586	.00491	.00216	-.00130	-.00008	.00361	.00208
-.500	.00112	.00595	-.00093	-.00150	.00019	.00445	.00393	.00170	-.00124	-.00005	.00268	.00165
-.520	.00075	.00467	-.00087	-.00143	-.00012	.00324	.00308	.00131	-.00118	-.00002	.00190	.00129
-.540	.00049	.00358	-.00082	-.00137	-.00034	.00221	.00235	.00098	-.00113	.00001	.00123	.00099
-.560	.00029	.00264	-.00077	-.00131	-.00048	.00133	.00173	.00071	-.00107	.00004	.00066	.00075
-.580	.00016	.00184	-.00072	-.00125	-.00057	.00059	.00121	.00049	-.00102	.00006	.00019	.00055
-.600	.00007	.00116	-.00068	-.00119	-.00061	-.00003	.00077	.00030	-.00096	.00008	-.00020	.00038
-.620	.00002	.00060	-.00063	-.00114	-.00061	-.00053	.00040	.00015	-.00091	.00010	-.00052	.00025
-.640	.00000	.00014	-.00059	-.00108	-.00059	-.00094	.00009	.00003	-.00087	.00011	-.00078	.00015
-.660	.00000	-.00024	-.00056	-.00103	-.00055	-.00127	-.00016	-.00006	-.00082	.00013	-.00098	.00007
-.680	.00002	-.00055	-.00052	-.00098	-.00050	-.00153	-.00036	-.00013	-.00077	.00014	-.00114	.00000
-.700	.00005	-.00079	-.00049	-.00094	-.00043	-.00173	-.00053	-.00019	-.00073	.00015	-.00126	-.00004
-.720	.00009	-.00098	-.00045	-.00089	-.00036	-.00187	-.00065	-.00023	-.00069	.00016	-.00134	-.00008
-.740	.00013	-.00112	-.00042	-.00085	-.00029	-.00197	-.00075	-.00026	-.00065	.00016	-.00140	-.00010
-.760	.00018	-.00122	-.00040	-.00081	-.00022	-.00202	-.00082	-.00028	-.00061	.00017	-.00144	-.00011
-.780	.00022	-.00128	-.00037	-.00077	-.00015	-.00205	-.00087	-.00029	-.00058	.00017	-.00145	-.00012
-.800	.00026	-.00132	-.00034	-.00073	-.00009	-.00205	-.00090	-.00030	-.00054	.00018	-.00145	-.00012
-.820	.00030	-.00134	-.00032	-.00069	-.00002	-.00203	-.00092	-.00029	-.00051	.00018	-.00143	-.00011
-.840	.00033	-.00133	-.00030	-.00066	.00003	-.00199	-.00093	-.00029	-.00048	.00018	-.00140	-.00011
-.860	.00036	-.00131	-.00028	-.00063	.00008	-.00194	-.00092	-.00028	-.00045	.00018	-.00137	-.00010
-.880	.00039	-.00128	-.00026	-.00060	.00013	-.00187	-.00091	-.00027	-.00042	.00018	-.00133	-.00009
-.900	.00041	-.00124	-.00024	-.00057	.00017	-.00180	-.00088	-.00026	-.00039	.00018	-.00128	-.00008
-.920	.00043	-.00119	-.00022	-.00054	.00020	-.00172	-.00086	-.00025	-.00037	.00018	-.00123	-.00006
-.940	.00044	-.00113	-.00021	-.00051	.00023	-.00164	-.00083	-.00023	-.00034	.00018	-.00117	-.00005
-.960	.00045	-.00108	-.00019	-.00048	.00026	-.00156	-.00080	-.00022	-.00032	.00018	-.00112	-.00004
-.980	.00045	-.00102	-.00018	-.00046	.00028	-.00147	-.00076	-.00020	-.00030	.00018	-.00106	-.00003
-1.000	.00046	-.00095	-.00017	-.00043	.00029	-.00139	-.00072	-.00019	-.00028	.00017	-.00100	-.00001
-1.020	.00046	-.00089	-.00015	-.00041	.00030	-.00130	-.00069	-.00017	-.00026	.00017	-.00095	-.00000
-1.040	.00045	-.00083	-.00014	-.00039	.00031	-.00122	-.00065	-.00016	-.00024	.00017	-.00089	.00001
-1.060	.00044	-.00077	-.00013	-.00037	.00031	-.00114	-.00061	-.00015	-.00022	.00016	-.00084	.00002
-1.080	.00044	-.00072	-.00012	-.00035	.00032	-.00107	-.00058	-.00013	-.00021	.00016	-.00079	.00002
-1.100	.00043	-.00066	-.00011	-.00033	.00031	-.00099	-.00054	-.00012	-.00019	.00015	-.00073	.00003
-1.120	.00041	-.00061	-.00010	-.00031	.00031	-.00092	-.00051	-.00011	-.00018	.00015	-.00069	.00004
-1.140	.00040	-.00056	-.00010	-.00030	.00031	-.00085	-.00047	-.00010	-.00016	.00015	-.00064	.00004
-1.160	.00039	-.00051	-.00009	-.00028	.00030	-.00079	-.00044	-.00009	-.00015	.00014	-.00060	.00005
-1.180	.00037	-.00047	-.00008	-.00026	.00029	-.00073	-.00041	-.00008	-.00014	.00014	-.00055	.00005
-1.200	.00036	-.00042	-.00007	-.00025	.00028	-.00067	-.00038	-.00007	-.00013	.00013	-.00051	.00006
-1.220	.00034	-.00038	-.00007	-.00024	.00027	-.00062	-.00036	-.00007	-.00012	.00013	-.00048	.00006
-1.240	.00032	-.00035	-.00006	-.00022	.00026	-.00057	-.00033	-.00006	-.00011	.00012	-.00044	.00006
-1.260	.00031	-.00031	-.00006	-.00021	.00025	-.00052	-.00031	-.00005	-.00010	.00012	-.00041	.00006
-1.280	.00029	-.00028	-.00005	-.00020	.00024	-.00048	-.00028	-.00005	-.00009	.00011	-.00037	.00006
-1.300	.00028	-.00025	-.00005	-.00019	.00023	-.00044	-.00026	-.00004	-.00008	.00011	-.00035	.00007
-1.320	.00026	-.00023	-.00004	-.00018	.00022	-.00040	-.00024	-.00004	-.00008	.00010	-.00032	.00007
-1.340	.00025	-.00020	-.00004	-.00017	.00020	-.00037	-.00022	-.00003	-.00007	.00010	-.00029	.00007
-1.360	.00023	-.00018	-.00004	-.00016	.00019	-.00034	-.00021	-.00003	-.00006	.00009	-.00027	.00007
-1.380	.00022	-.00016	-.00003	-.00015	.00018	-.00031	-.00019	-.00003	-.00006	.00009	-.00025	.00006
-1.400	.00020	-.00014	-.00003	-.00014	.00017	-.00028	-.00017	-.00002	-.00005	.00009	-.00022	.00006
-1.420	.00019	-.00013	-.00003	-.00013	.00016	-.00026	-.00016	-.00002	-.00005	.00008	-.00021	.00006
-1.440	.00018	-.00011	-.00003	-.00012	.00015	-.00023	-.00015	-.00002	-.00004	.00008	-.00019	.00006
-1.460	.00016	-.00010	-.00002	-.00011	.00014	-.00021	-.00013	-.00002	-.00004	.00007	-.00017	.00006
-1.480	.00015	-.00009	-.00002	-.00011	.00013	-.00019	-.00012	-.00001	-.00003	.00007	-.00016	.00006
-1.500	.00014	-.00008	-.00002	-.00010	.00012	-.00018	-.00011	-.00001	-.00003	.00007	-.00014	.00006
-1.520	.00013	-.00007	-.00002	-.00010	.00011	-.00016	-.00010	-.00001	-.00003	.00006	-.00013	.00005
-1.540	.00012	-.00006	-.00002	-.00009	.00011	-.00015	-.00009	-.00001	-.00002	.00006	-.00012	.00005
-1.560	.00011	-.00005	-.00001	-.00008	.00010	-.00013	-.00009	-.00001	-.00002	.00006	-.00011	.00005
-1.580	.00010	-.00004	-.00001	-.00008	.00009	-.00012	-.00008	-.00001	-.00002	.00005	-.00010	.00005
-1.600	.00010	-.00004	-.00001	-.00007	.00008	-.00011	-.00007	-.00001	-.00001	.00005	-.00009	.00005
-1.620	.00009	-.00003	-.00001	-.00007	.00008	-.00010	-.00007	-.00000	-.00001	.00005	-.00008	.00004
-1.640	.00008	-.00003	-.00001	-.00006	.00007	-.00009	-.00006	-.00000	-.00001	.00004	-.00007	.00004
-1.660	.00007	-.00002	-.00001	-.00006	.00007	-.00008	-.00005	-.00000	-.00001	.00004	-.00006	.00004
-1.680	.00007	-.00002	-.00001	-.00006	.00006	-.00007	-.00005	-.00000	-.00001	.00004	-.00006	.00004
-1.700	.00006	-.00002	-.00001	-.00005	.00006	-.00007	-.00005	-.00000	-.00001	.00004	-.00005	.00004
-1.720	.00006	-.00001	-.00001	-.00005	.00005	-.00006	-.00004	-.00000	-.00000	.00003	-.00005	.00003
-1.740	.00005	-.00001	-.00000	-.00005	.00005	-.00006	-.00004	-.00000	-.00000	.00003	-.00004	.00003
-1.760	.00005	-.00001	-.00000	-.00004	.00004	-.00005	-.00003	-.00000	-.00000	.00003	-.00004	.00003
-1.780	.00004	-.00001	-.00000	-.00004	.00004	-.00005	-.00003	-.00000	-.00000	.00003	-.00003	.00003
-1.800	.00004	-.00000	-.00000	-.00004	.00004	-.00004	-.00003	-.00000	-.00000	.00003	-.00003	.00003
-1.820	.00004	-.00000	-.00000	-.00003	.00003	-.00004	-.00003	-.00000	-.00000	.00002	-.00003	.00002
-1.840	.00003	-.00000	-.00000	-.00003	.00003	-.00003	-.00002	.00000	.00000	.00002	-.00002	.00002
-1.860	.00003	-.00000	-.00000	-.00003	.00003	-.00003	-.00002	.00000	.00000	.00002	-.00002	.00002
-1.880	.00003	-.00000	-.00000	-.00003	.00003	-.00003	-.00002	.00000	.00000	.00002	-.00002	.00002
-1.900	.00002	.00000	-.00000	-.00003	.00002	-.00003	-.00002	.00000	.00000	.00002	-.00002	.00002
-1.920	.00002	.00000	-.00000	-.00002	.00002	-.00002	-.00002	.00000	.00000	.00002	-.00001	.00002
-1.940	.00002	.00000	-.00000	-.00002	.00002	-.00002	-.00001	.00000	.00000	.00002	-.00001	.00002
-1.960	.00002	.00000	-.00000	-.00002	.00002	-.00002	-.00001	.00000	.00000	.00001	-.00001	.00001
-1.980	.00002	.00000	-.00000	-.00002	.00002	-.00002	-.00001	.00000	.00000	.00001	-.00001	.00001
-2.000	.00001	.00000	-.00000	-.00002	.00001	-.00001	-.00001	.00000	.00000	.00001	-.00001	.00001

xxxxx PI- P —> PI0 N PLAB = 150.20 TMIN = 0.0000
KINEMATICS 0 ELAB = 150.20, S = 282.67, W = 16.81, K = 8.38, E1 = 8.38, E2 = 8.43, E3 = 8.38, E4 = 8.43, Q = 8.38

T	DS/DT	P	R	A
-.000000	.019720	.000063	-.001075	.999999
-.020000	.019351	.068712	-.988137	.137346
-.040000	.018040	.078428	-.934544	-.347098
-.060000	.016206	.079628	-.769851	-.633237
-.080000	.014152	.077468	-.587118	-.805786
-.100000	.012082	.073552	-.410836	-.908738
-.120000	.010125	.068443	-.247281	-.966524
-.140000	.008353	.062297	-.096961	-.993337
-.160000	.006798	.055083	.041445	-.997621
-.180000	.005469	.046667	.169680	-.984394
-.200000	.004355	.036849	.289374	-.956506
-.220000	.003436	.025381	.401816	-.915369
-.240000	.002690	.011980	.507825	-.861377
-.260000	.002082	-.003653	.607655	-.794193
-.280000	.001618	-.021814	.700867	-.712958
-.300000	.001246	-.042751	.786190	-.616504
-.320000	.000958	-.066601	.861356	-.503616
-.340000	.000736	-.093300	.922962	-.373411
-.360000	.000566	-.122460	.966433	-.225855
-.380000	.000438	-.153227	.986217	-.062429
-.400000	.000341	-.184168	.976360	.113156
-.420000	.000268	-.213242	.931575	.284441
-.440000	.000215	-.237945	.848744	.472246
-.460000	.000175	-.255677	.728450	.635602
-.480000	.000146	-.264276	.575899	.773627
-.500000	.000124	-.262551	.400567	.877846
-.520000	.000107	-.250570	.214498	.944037
-.540000	.000094	-.229587	.029832	.972831
-.560000	.000084	-.201644	-.143396	.968905
-.580000	.000076	-.169058	-.298479	.939324
-.600000	.000070	-.133998	-.432142	.891795
-.620000	.000064	-.098224	-.543893	.833386
-.640000	.000059	-.063017	-.635098	.769857
-.660000	.000055	-.029212	-.708117	.705491
-.680000	.000051	.002709	-.765669	.643229
-.700000	.000047	.032520	-.810429	.584934
-.720000	.000044	.060163	-.844818	.531660
-.740000	.000040	.085682	-.870918	.483902
-.760000	.000037	.109180	-.890456	.441779
-.780000	.000034	.130782	-.904836	.405175
-.800000	.000032	.150622	-.915183	.373836
-.820000	.000029	.168826	-.922383	.347430
-.840000	.000027	.185513	-.927132	.325594
-.860000	.000024	.200787	-.929972	.307954
-.880000	.000022	.214737	-.931324	.294149
-.900000	.000020	.227441	-.931510	.283830
-.920000	.000018	.238964	-.930779	.276671
-.940000	.000017	.249362	-.929320	.272367
-.960000	.000015	.258680	-.927276	.270635
-.980000	.000014	.266959	-.924757	.271214
-1.000000	.000012	.274232	-.921844	.273861
-1.020000	.000011	.280530	-.918599	.278351
-1.040000	.000010	.285881	-.915066	.284476
-1.060000	.000009	.290310	-.911280	.292042
-1.080000	.000008	.293842	-.907267	.300870
-1.100000	.000008	.296504	-.903047	.310791
-1.120000	.000007	.298320	-.898636	.321651
-1.140000	.000006	.299318	-.894046	.333302
-1.160000	.000006	.299527	-.889290	.345611
-1.180000	.000005	.298977	-.884379	.358451
-1.200000	.000005	.297700	-.879323	.371706
-1.220000	.000004	.295730	-.874135	.385269
-1.240000	.000004	.293104	-.868825	.399041
-1.260000	.000003	.289859	-.863406	.412932
-1.280000	.000003	.286033	-.857890	.426860
-1.300000	.000003	.281669	-.852293	.440749
-1.320000	.000002	.276807	-.846627	.454534
-1.340000	.000002	.271489	-.840907	.468155
-1.360000	.000002	.265757	-.835148	.481560
-1.380000	.000002	.259655	-.829366	.494704
-1.400000	.000002	.253224	-.823574	.507547
-1.420000	.000002	.246506	-.817788	.520056
-1.440000	.000001	.239542	-.812021	.532205
-1.460000	.000001	.232371	-.806287	.543971
-1.480000	.000001	.225033	-.800600	.555338
-1.500000	.000001	.217563	-.794972	.566292
-1.520000	.000001	.209996	-.789413	.576826
-1.540000	.000001	.202367	-.783935	.586935
-1.560000	.000001	.194707	-.778548	.596618
-1.580000	.000001	.187044	-.773259	.605876
-1.600000	.000001	.179407	-.768076	.614713
-1.620000	.000001	.171820	-.763007	.623136
-1.640000	.000001	.164306	-.758056	.631154
-1.660000	.000000	.156887	-.753228	.638776
-1.680000	.000000	.149581	-.748527	.646013
-1.700000	.000000	.142405	-.743957	.652878
-1.720000	.000000	.135375	-.739518	.659383
-1.740000	.000000	.128504	-.735213	.665544
-1.760000	.000000	.121803	-.731042	.671373
-1.780000	.000000	.115282	-.727005	.676886
-1.800000	.000000	.108950	-.723101	.682096
-1.820000	.000000	.102814	-.719329	.687019
-1.840000	.000000	.096878	-.715688	.691668
-1.860000	.000000	.091147	-.712176	.696059
-1.880000	.000000	.085625	-.708790	.700204
-1.900000	.000000	.080313	-.705527	.704117
-1.920000	.000000	.075212	-.702386	.707812
-1.940000	.000000	.070322	-.699362	.711300
-1.960000	.000000	.065644	-.696452	.714594
-1.980000	.000000	.061175	-.693654	.717706
-2.000000	.000000	.056913	-.690963	.720646

CROSS SECTION = .002822

xxxxx PI- P —> PI0 N PLAB = 150.20 TMIN = 0.0000 xxxxx

FITS TO EXPERIMENTAL DATA

DIFFERENTIAL CROSS SECTION – DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76. CHISQ = 5043.20430

T VALUES	-.00200	-.00600	-.01200	-.02000	-.02800	-.04000	-.05600	-.07200	-.09000	-.11000	-.14000	-.18000	-.22000	-.26000	-.31000
THEORETICAL	.01974	.01974	.01964	.01935	.01891	.01804	.01660	.01499	.01311	.01108	.00835	.00547	.00344	.00209	.00109
EXPERIMENTAL	.01340	.01400	.01460	.01480	.01560	.01450	.01320	.01190	.01000	.00820	.00554	.00354	.00210	.00115	.00053
EXPT. ERRORS	.00050	.00060	.00050	.00050	.00050	.00040	.00040	.00030	.00030	.00020	.00015	.00011	.00008	.00006	.00003
CHI SQUAREDS	*********	91.47195	*********	82.86040	43.92098	78.32689	72.19686	*********	*********	*********	*********	*********	*********	*********	*********

T VALUES	-.37000	-.45000	-.55000	-.65000	-.75000	-.90000	-1.10000	-1.30000
THEORETICAL	.00050	.00019	.00009	.00006	.00004	.00002	.00001	.00000
EXPERIMENTAL	.00020	.00005	.00001	.00001	.00000	.00001	.00000	.00000
EXPT. ERRORS	.00002	.00001	.00000	.00000	.00000	.00000	.00000	.00000
CHI SQUAREDS	*********	*********	*********	*********	*********	66.00614	25.64627	4.96929

xxxxx PI- P —> PI0 N PLAB = 199.30 TMIN = .0000
KINEMATICS 0 ELAB = 199.30, S = 374.79, W = 19.36, K = 9.66, E1 = 9.66, E2 = 9.70, E3 = 9.66, E4 = 9.70, Q = 9.66

xxxxx NONFLIP AMPLITUDES AT A SERIES OF VALUES OF T xxxxx

T	PHI++ (POLE) REAL	IMAG	PHI++ (CUT) REAL	IMAG	PHI++ REAL	IMAG	FPER++ P	FPAR++ P	FPER++ C	FPAR++ C	FPER++	FPAR++
-.000	.11391	.10697	-.01910	-.02799	.09481	.07898	.09350	.05888	-.01703	-.01685	.07647	.04203
-.020	.08966	.08856	-.01790	-.02669	.07176	.06187	.07569	.04702	-.01652	-.01560	.05917	.03142
-.040	.07048	.07322	-.01677	-.02545	.05371	.04778	.06128	.03754	-.01601	-.01442	.04527	.02312
-.060	.05533	.06047	-.01571	-.02426	.03962	.03621	.04960	.02997	-.01550	-.01332	.03410	.01665
-.080	.04337	.04988	-.01472	-.02313	.02866	.02675	.04015	.02392	-.01500	-.01229	.02516	.01164
-.100	.03395	.04109	-.01379	-.02205	.02017	.01904	.03250	.01909	-.01449	-.01132	.01801	.00778
-.120	.02654	.03382	-.01291	-.02102	.01363	.01280	.02630	.01524	-.01400	-.01041	.01231	.00482
-.140	.02070	.02781	-.01209	-.02004	.00862	.00776	.02129	.01216	-.01351	-.00957	.00778	.00259
-.160	.01613	.02284	-.01131	-.01911	.00481	.00373	.01723	.00970	-.01302	-.00877	.00421	.00092
-.180	.01254	.01874	-.01059	-.01822	.00195	.00053	.01394	.00774	-.01255	-.00803	.00139	-.00030
-.200	.00972	.01537	-.00991	-.01737	-.00018	-.00200	.01128	.00617	-.01208	-.00734	-.00080	-.00117
-.220	.00753	.01259	-.00927	-.01656	-.00174	-.00397	.00913	.00492	-.01162	-.00670	-.00249	-.00178
-.240	.00581	.01030	-.00867	-.01578	-.00286	-.00548	.00739	.00392	-.01118	-.00610	-.00379	-.00218
-.260	.00448	.00842	-.00810	-.01505	-.00363	-.00662	.00598	.00313	-.01074	-.00554	-.00476	-.00241
-.280	.00344	.00688	-.00758	-.01434	-.00414	-.00746	.00483	.00249	-.01031	-.00502	-.00548	-.00253
-.300	.00263	.00562	-.00708	-.01367	-.00445	-.00805	.00391	.00199	-.00990	-.00454	-.00599	-.00255
-.320	.00201	.00458	-.00661	-.01303	-.00461	-.00845	.00316	.00158	-.00949	-.00409	-.00633	-.00250
-.340	.00152	.00374	-.00618	-.01242	-.00465	-.00869	.00256	.00126	-.00910	-.00367	-.00654	-.00241
-.360	.00115	.00304	-.00577	-.01184	-.00462	-.00880	.00207	.00100	-.00872	-.00328	-.00665	-.00228
-.380	.00087	.00248	-.00538	-.01129	-.00452	-.00881	.00167	.00080	-.00835	-.00292	-.00667	-.00212
-.400	.00065	.00201	-.00502	-.01076	-.00438	-.00875	.00135	.00064	-.00799	-.00259	-.00663	-.00195
-.420	.00048	.00164	-.00469	-.01026	-.00420	-.00862	.00110	.00051	-.00764	-.00228	-.00654	-.00178
-.440	.00036	.00133	-.00437	-.00978	-.00402	-.00845	.00089	.00040	-.00730	-.00200	-.00642	-.00160
-.460	.00026	.00108	-.00407	-.00932	-.00381	-.00824	.00072	.00032	-.00698	-.00174	-.00626	-.00142
-.480	.00019	.00088	-.00380	-.00888	-.00361	-.00801	.00058	.00025	-.00666	-.00150	-.00609	-.00124
-.500	.00013	.00071	-.00354	-.00847	-.00340	-.00776	.00047	.00020	-.00636	-.00128	-.00589	-.00107
-.520	.00009	.00057	-.00329	-.00807	-.00320	-.00750	.00038	.00016	-.00607	-.00107	-.00569	-.00091
-.540	.00006	.00047	-.00306	-.00769	-.00300	-.00723	.00031	.00013	-.00579	-.00088	-.00548	-.00076
-.560	.00004	.00038	-.00285	-.00733	-.00281	-.00696	.00025	.00010	-.00552	-.00071	-.00527	-.00061
-.580	.00003	.00030	-.00265	-.00699	-.00262	-.00668	.00020	.00008	-.00526	-.00056	-.00506	-.00048
-.600	.00001	.00025	-.00246	-.00666	-.00245	-.00642	.00016	.00006	-.00500	-.00041	-.00484	-.00035
-.620	.00001	.00020	-.00229	-.00635	-.00228	-.00615	.00013	.00005	-.00476	-.00028	-.00463	-.00023
-.640	.00000	.00016	-.00212	-.00605	-.00212	-.00589	.00011	.00004	-.00453	-.00016	-.00443	-.00012
-.660	-.00000	.00013	-.00197	-.00577	-.00197	-.00564	.00009	.00003	-.00431	-.00006	-.00422	-.00003
-.680	-.00000	.00010	-.00182	-.00550	-.00183	-.00539	.00007	.00003	-.00410	.00004	-.00403	.00007
-.700	-.00001	.00008	-.00169	-.00524	-.00170	-.00516	.00006	.00002	-.00389	.00013	-.00384	.00015
-.720	-.00001	.00007	-.00156	-.00499	-.00157	-.00493	.00005	.00002	-.00370	.00021	-.00365	.00022
-.740	-.00001	.00005	-.00145	-.00476	-.00145	-.00471	.00004	.00001	-.00351	.00028	-.00347	.00029
-.760	-.00001	.00004	-.00134	-.00454	-.00134	-.00449	.00003	.00001	-.00333	.00034	-.00330	.00035
-.780	-.00001	.00004	-.00123	-.00432	-.00124	-.00429	.00002	.00001	-.00316	.00039	-.00313	.00040
-.800	-.00001	.00003	-.00114	-.00412	-.00114	-.00409	.00002	.00001	-.00299	.00044	-.00297	.00045
-.820	-.00001	.00002	-.00105	-.00393	-.00105	-.00391	.00002	.00000	-.00283	.00049	-.00282	.00049
-.840	-.00000	.00002	-.00097	-.00374	-.00097	-.00373	.00001	.00000	-.00268	.00052	-.00267	.00053
-.860	-.00000	.00001	-.00089	-.00357	-.00089	-.00355	.00001	.00000	-.00254	.00056	-.00253	.00056
-.880	-.00000	.00001	-.00082	-.00340	-.00082	-.00339	.00001	.00000	-.00240	.00059	-.00240	.00059
-.900	-.00000	.00001	-.00075	-.00324	-.00075	-.00323	.00001	.00000	-.00227	.00061	-.00227	.00061
-.920	-.00000	.00001	-.00068	-.00309	-.00069	-.00308	.00001	.00000	-.00215	.00063	-.00214	.00063
-.940	-.00000	.00001	-.00063	-.00295	-.00063	-.00294	.00000	.00000	-.00203	.00064	-.00203	.00065
-.960	-.00000	.00000	-.00057	-.00281	-.00057	-.00280	.00000	.00000	-.00192	.00066	-.00191	.00066
-.980	-.00000	.00000	-.00052	-.00268	-.00052	-.00267	.00000	.00000	-.00181	.00067	-.00181	.00067
-1.000	-.00000	.00000	-.00047	-.00255	-.00047	-.00255	.00000	.00000	-.00171	.00067	-.00170	.00067
-1.020	-.00000	.00000	-.00043	-.00243	-.00043	-.00243	.00000	.00000	-.00161	.00068	-.00161	.00068
-1.040	-.00000	.00000	-.00039	-.00232	-.00039	-.00232	.00000	.00000	-.00152	.00068	-.00152	.00068
-1.060	-.00000	.00000	-.00035	-.00221	-.00035	-.00221	.00000	.00000	-.00143	.00068	-.00143	.00068
-1.080	-.00000	.00000	-.00032	-.00211	-.00032	-.00210	.00000	.00000	-.00134	.00068	-.00134	.00068
-1.100	-.00000	.00000	-.00028	-.00201	-.00028	-.00201	.00000	.00000	-.00127	.00067	-.00126	.00067
-1.120	-.00000	.00000	-.00025	-.00191	-.00025	-.00191	.00000	.00000	-.00119	.00067	-.00119	.00067
-1.140	-.00000	.00000	-.00022	-.00182	-.00022	-.00182	.00000	.00000	-.00112	.00066	-.00112	.00066
-1.160	-.00000	.00000	-.00020	-.00174	-.00020	-.00174	.00000	.00000	-.00105	.00065	-.00105	.00065
-1.180	-.00000	.00000	-.00017	-.00166	-.00017	-.00166	.00000	.00000	-.00099	.00064	-.00099	.00064
-1.200	-.00000	.00000	-.00015	-.00158	-.00015	-.00158	.00000	.00000	-.00092	.00063	-.00092	.00063
-1.220	-.00000	.00000	-.00013	-.00150	-.00013	-.00150	.00000	.00000	-.00087	.00062	-.00087	.00062
-1.240	-.00000	.00000	-.00011	-.00143	-.00011	-.00143	.00000	.00000	-.00081	.00061	-.00081	.00061
-1.260	-.00000	.00000	-.00009	-.00137	-.00009	-.00137	.00000	.00000	-.00076	.00060	-.00076	.00060
-1.280	-.00000	.00000	-.00008	-.00130	-.00008	-.00130	.00000	.00000	-.00071	.00059	-.00071	.00059
-1.300	-.00000	.00000	-.00006	-.00124	-.00006	-.00124	.00000	.00000	-.00066	.00058	-.00066	.00058
-1.320	-.00000	.00000	-.00005	-.00118	-.00005	-.00118	.00000	.00000	-.00062	.00056	-.00062	.00056
-1.340	-.00000	.00000	-.00004	-.00113	-.00004	-.00113	.00000	.00000	-.00058	.00055	-.00058	.00055
-1.360	-.00000	.00000	-.00003	-.00108	-.00003	-.00108	.00000	.00000	-.00054	.00054	-.00054	.00054
-1.380	-.00000	.00000	-.00002	-.00103	-.00002	-.00103	.00000	.00000	-.00050	.00052	-.00050	.00052
-1.400	-.00000	.00000	-.00001	-.00098	-.00001	-.00098	.00000	.00000	-.00047	.00051	-.00047	.00051
-1.420	-.00000	.00000	.00000	-.00093	.00000	-.00093	.00000	.00000	-.00044	.00049	-.00044	.00049
-1.440	-.00000	.00000	.00001	-.00089	.00001	-.00089	.00000	.00000	-.00040	.00048	-.00040	.00048
-1.460	-.00000	.00000	.00002	-.00085	.00002	-.00085	.00000	.00000	-.00038	.00047	-.00038	.00047
-1.480	-.00000	.00000	.00002	-.00081	.00002	-.00081	.00000	.00000	-.00035	.00045	-.00035	.00045
-1.500	-.00000	.00000	.00003	-.00077	.00003	-.00077	.00000	.00000	-.00032	.00044	-.00032	.00044
-1.520	-.00000	.00000	.00004	-.00073	.00004	-.00073	.00000	.00000	-.00030	.00042	-.00030	.00042
-1.540	-.00000	.00000	.00004	-.00070	.00004	-.00070	.00000	.00000	-.00027	.00041	-.00027	.00041
-1.560	-.00000	.00000	.00004	-.00067	.00004	-.00067	.00000	.00000	-.00025	.00040	-.00025	.00040
-1.580	-.00000	.00000	.00005	-.00063	.00005	-.00063	.00000	.00000	-.00023	.00038	-.00023	.00038
-1.600	-.00000	.00000	.00005	-.00060	.00005	-.00060	.00000	.00000	-.00021	.00037	-.00021	.00037
-1.620	-.00000	.00000	.00006	-.00058	.00006	-.00058	.00000	.00000	-.00020	.00036	-.00020	.00036
-1.640	-.00000	.00000	.00006	-.00055	.00006	-.00055	.00000	.00000	-.00018	.00035	-.00018	.00035
-1.660	-.00000	.00000	.00006	-.00052	.00006	-.00052	.00000	.00000	-.00016	.00033	-.00016	.00033
-1.680	-.00000	.00000	.00006	-.00050	.00006	-.00050	.00000	.00000	-.00015	.00032	-.00015	.00032
-1.700	-.00000	.00000	.00006	-.00048	.00006	-.00048	.00000	.00000	-.00014	.00031	-.00014	.00031
-1.720	-.00000	.00000	.00006	-.00045	.00006	-.00045	.00000	.00000	-.00012	.00030	-.00012	.00030
-1.740	-.00000	.00000	.00007	-.00043	.00007	-.00043	.00000	.00000	-.00011	.00029	-.00011	.00029
-1.760	-.00000	.00000	.00007	-.00041	.00007	-.00041	.00000	.00000	-.00010	.00028	-.00010	.00028
-1.780	-.00000	.00000	.00007	-.00039	.00007	-.00039	.00000	.00000	-.00009	.00027	-.00009	.00027
-1.800	-.00000	.00000	.00007	-.00037	.00007	-.00037	.00000	.00000	-.00008	.00026	-.00008	.00026
-1.820	-.00000	.00000	.00007	-.00036	.00007	-.00036	.00000	.00000	-.00007	.00025	-.00007	.00025
-1.840	-.00000	.00000	.00007	-.00034	.00007	-.00034	.00000	-.00000	-.00006	.00024	-.00006	.00024
-1.860	-.00000	.00000	.00007	-.00032	.00007	-.00032	.00000	-.00000	-.00005	.00023	-.00005	.00023
-1.880	-.00000	.00000	.00007	-.00031	.00007	-.00031	.00000	-.00000	-.00005	.00022	-.00005	.00022
-1.900	-.00000	-.00000	.00007	-.00029	.00007	-.00029	.00000	-.00000	-.00004	.00021	-.00004	.00021
-1.920	-.00000	-.00000	.00007	-.00028	.00007	-.00028	.00000	-.00000	-.00003	.00020	-.00003	.00020
-1.940	-.00000	-.00000	.00007	-.00027	.00007	-.00027	.00000	-.00000	-.00003	.00019	-.00003	.00019
-1.960	-.00000	-.00000	.00007	-.00025	.00007	-.00025	.00000	-.00000	-.00002	.00018	-.00002	.00018
-1.980	-.00000	-.00000	.00007	-.00024	.00007	-.00024	.00000	-.00000	-.00002	.00018	-.00002	.00018
-2.000	-.00000	-.00000	.00007	-.00023	.00007	-.00023	.00000	-.00000	-.00001	.00017	-.00001	.00017

xxxxx PI- P —> PIO N PLAB = 199.30 TMIN = .0000
KINEMATICS 0 ELAB = 199.30, S = 374.79, W = 19.36, K = 9.66, E1 = 9.66, E2 = 9.70, E3 = 9.66, E4 = 9.70, Q = 9.66

xxxxx FLIP AMPLITUDES AT A SERIES OF VALUES OF T xxxxx

T	PHI+- (POLE) REAL	PHI+- (POLE) IMAG	PHI+- (CUT) REAL	PHI+- (CUT) IMAG	PHI+- REAL	PHI+- IMAG	FPER+- P	FPAR+- P	FPER+- C	FPAR+- C	FPER+-	FPAR+-
-.000	.00005	.00004	-.00000	-.00000	.00005	.00004	.00004	.00002	-.00000	-.00000	.00004	.00002
-.020	.05529	.05462	-.00117	-.00126	.05413	.05336	.04668	.02900	-.00100	-.00069	.04568	.02831
-.040	.06523	.06777	-.00151	-.00166	.06372	.06611	.05671	.03475	-.00133	-.00086	.05539	.03388
-.060	.06648	.07266	-.00169	-.00189	.06479	.07077	.05960	.03601	-.00152	-.00094	.05808	.03507
-.080	.06372	.07327	-.00179	-.00203	.06193	.07124	.05898	.03514	-.00165	-.00097	.05733	.03418
-.100	.05897	.07137	-.00183	-.00211	.05713	.06926	.05644	.03316	-.00173	-.00096	.05471	.03220
-.120	.05331	.06795	-.00184	-.00215	.05147	.06580	.05285	.03061	-.00177	-.00093	.05107	.02968
-.140	.04738	.06364	-.00182	-.00217	.04556	.06147	.04872	.02782	-.00180	-.00089	.04692	.02693
-.160	.04154	.05883	-.00179	-.00216	.03975	.05667	.04438	.02498	-.00180	-.00084	.04258	.02415
-.180	.03600	.05382	-.00174	-.00214	.03426	.05169	.04004	.02222	-.00178	-.00078	.03825	.02143
-.200	.03088	.04880	-.00168	-.00210	.02920	.04670	.03583	.01959	-.00176	-.00072	.03407	.01887
-.220	.02625	.04390	-.00162	-.00205	.02463	.04184	.03184	.01716	-.00173	-.00066	.03011	.01650
-.240	.02212	.03920	-.00155	-.00200	.02056	.03720	.02811	.01493	-.00169	-.00060	.02642	.01433
-.260	.01848	.03477	-.00149	-.00195	.01699	.03283	.02467	.01291	-.00165	-.00054	.02303	.01236
-.280	.01531	.03065	-.00142	-.00189	.01389	.02876	.02153	.01110	-.00160	-.00048	.01994	.01061
-.300	.01257	.02684	-.00135	-.00182	.01122	.02502	.01869	.00948	-.00155	-.00043	.01714	.00905
-.320	.01023	.02336	-.00128	-.00176	.00895	.02160	.01613	.00806	-.00149	-.00038	.01464	.00768
-.340	.00824	.02020	-.00121	-.00170	.00703	.01850	.01384	.00681	-.00144	-.00033	.01240	.00648
-.360	.00657	.01734	-.00115	-.00163	.00542	.01571	.01180	.00572	-.00138	-.00028	.01042	.00544
-.380	.00518	.01479	-.00108	-.00157	.00410	.01322	.01000	.00477	-.00133	-.00024	.00867	.00453
-.400	.00403	.01251	-.00102	-.00151	.00301	.01101	.00842	.00395	-.00127	-.00020	.00714	.00375
-.420	.00309	.01050	-.00097	-.00144	.00213	.00905	.00703	.00324	-.00122	-.00016	.00581	.00309
-.440	.00233	.00872	-.00091	-.00138	.00142	.00734	.00581	.00264	-.00116	-.00012	.00465	.00252
-.460	.00172	.00717	-.00086	-.00132	.00087	.00584	.00476	.00213	-.00111	-.00009	.00365	.00204
-.480	.00124	.00581	-.00080	-.00127	.00044	.00455	.00385	.00169	-.00106	-.00006	.00279	.00163
-.500	.00087	.00464	-.00076	-.00121	.00011	.00343	.00306	.00132	-.00101	-.00004	.00206	.00129
-.520	.00059	.00363	-.00071	-.00116	-.00012	.00247	.00239	.00102	-.00096	-.00001	.00143	.00101
-.540	.00037	.00276	-.00067	-.00110	-.00029	.00166	.00182	.00076	-.00091	.00001	.00091	.00077
-.560	.00022	.00203	-.00062	-.00105	-.00040	.00097	.00133	.00055	-.00086	.00003	.00047	.00058
-.580	.00012	.00141	-.00058	-.00100	-.00047	.00040	.00093	.00037	-.00082	.00005	.00011	.00042
-.600	.00005	.00089	-.00055	-.00096	-.00049	-.00007	.00058	.00023	-.00078	.00006	-.00019	.00030
-.620	.00002	.00046	-.00051	-.00091	-.00050	-.00045	.00030	.00012	-.00074	.00008	-.00043	.00020
-.640	.00000	.00010	-.00048	-.00087	-.00048	-.00076	.00007	.00003	-.00070	.00009	-.00063	.00012
-.660	.00000	-.00018	-.00045	-.00083	-.00044	-.00101	-.00012	-.00005	-.00066	.00010	-.00078	.00006
-.680	.00002	-.00041	-.00042	-.00079	-.00040	-.00120	-.00027	-.00010	-.00062	.00011	-.00089	.00001
-.700	.00004	-.00059	-.00039	-.00075	-.00035	-.00134	-.00039	-.00014	-.00059	.00012	-.00098	-.00002
-.720	.00007	-.00072	-.00036	-.00071	-.00030	-.00144	-.00049	-.00017	-.00055	.00013	-.00104	-.00005
-.740	.00010	-.00082	-.00034	-.00068	-.00024	-.00150	-.00055	-.00019	-.00052	.00013	-.00107	-.00006
-.760	.00013	-.00089	-.00032	-.00064	-.00019	-.00154	-.00060	-.00021	-.00049	.00014	-.00109	-.00007
-.780	.00016	-.00094	-.00030	-.00061	-.00014	-.00155	-.00064	-.00021	-.00046	.00014	-.00110	-.00007
-.800	.00019	-.00096	-.00027	-.00058	-.00009	-.00154	-.00066	-.00022	-.00043	.00014	-.00109	-.00007
-.820	.00022	-.00097	-.00026	-.00055	-.00004	-.00152	-.00067	-.00021	-.00040	.00014	-.00107	-.00007
-.840	.00024	-.00096	-.00024	-.00052	.00000	-.00148	-.00067	-.00021	-.00038	.00015	-.00105	-.00006
-.860	.00026	-.00094	-.00022	-.00050	.00004	-.00144	-.00066	-.00020	-.00036	.00015	-.00102	-.00006
-.880	.00028	-.00091	-.00021	-.00047	.00007	-.00139	-.00065	-.00019	-.00033	.00015	-.00098	-.00005
-.900	.00029	-.00088	-.00019	-.00045	.00010	-.00133	-.00063	-.00018	-.00031	.00015	-.00094	-.00004
-.920	.00030	-.00084	-.00018	-.00042	.00013	-.00127	-.00061	-.00017	-.00029	.00014	-.00090	-.00003
-.940	.00031	-.00080	-.00016	-.00040	.00015	-.00120	-.00058	-.00016	-.00027	.00014	-.00086	-.00002
-.960	.00032	-.00076	-.00015	-.00038	.00016	-.00114	-.00056	-.00015	-.00025	.00014	-.00081	-.00001
-.980	.00032	-.00071	-.00014	-.00036	.00018	-.00107	-.00053	-.00014	-.00024	.00014	-.00077	-.00000
-1.000	.00032	-.00066	-.00013	-.00034	.00019	-.00101	-.00050	-.00013	-.00022	.00014	-.00072	.00001
-1.020	.00032	-.00062	-.00012	-.00032	.00019	-.00094	-.00048	-.00012	-.00020	.00013	-.00068	.00001
-1.040	.00031	-.00057	-.00011	-.00031	.00020	-.00088	-.00045	-.00011	-.00019	.00013	-.00064	.00002
-1.060	.00031	-.00053	-.00010	-.00029	.00020	-.00082	-.00042	-.00010	-.00018	.00013	-.00060	.00003
-1.080	.00030	-.00049	-.00010	-.00027	.00020	-.00076	-.00039	-.00009	-.00016	.00012	-.00056	.00003
-1.100	.00029	-.00045	-.00009	-.00026	.00020	-.00071	-.00037	-.00008	-.00015	.00012	-.00052	.00004
-1.120	.00028	-.00041	-.00008	-.00024	.00020	-.00066	-.00034	-.00008	-.00014	.00012	-.00048	.00004
-1.140	.00027	-.00038	-.00007	-.00023	.00020	-.00061	-.00032	-.00007	-.00013	.00011	-.00045	.00004
-1.160	.00026	-.00034	-.00007	-.00022	.00019	-.00056	-.00030	-.00006	-.00012	.00011	-.00042	.00005
-1.180	.00025	-.00031	-.00006	-.00021	.00019	-.00052	-.00028	-.00006	-.00011	.00011	-.00038	.00005
-1.200	.00024	-.00028	-.00006	-.00019	.00018	-.00048	-.00026	-.00005	-.00010	.00010	-.00036	.00005
-1.220	.00023	-.00025	-.00005	-.00018	.00017	-.00044	-.00024	-.00004	-.00009	.00010	-.00033	.00005
-1.240	.00021	-.00023	-.00005	-.00017	.00016	-.00040	-.00022	-.00004	-.00008	.00009	-.00030	.00005
-1.260	.00020	-.00021	-.00004	-.00016	.00016	-.00037	-.00020	-.00004	-.00008	.00009	-.00028	.00006
-1.280	.00019	-.00019	-.00004	-.00015	.00015	-.00034	-.00019	-.00003	-.00007	.00009	-.00026	.00006
-1.300	.00018	-.00017	-.00004	-.00014	.00014	-.00031	-.00017	-.00003	-.00006	.00008	-.00023	.00006
-1.320	.00017	-.00015	-.00003	-.00014	.00013	-.00028	-.00016	-.00002	-.00006	.00008	-.00021	.00006
-1.340	.00016	-.00013	-.00003	-.00013	.00013	-.00026	-.00014	-.00002	-.00005	.00008	-.00020	.00005
-1.360	.00015	-.00012	-.00003	-.00012	.00012	-.00024	-.00013	-.00002	-.00005	.00007	-.00018	.00005
-1.380	.00014	-.00010	-.00003	-.00011	.00011	-.00022	-.00012	-.00002	-.00004	.00007	-.00016	.00005
-1.400	.00013	-.00009	-.00002	-.00011	.00010	-.00020	-.00011	-.00001	-.00004	.00007	-.00015	.00005
-1.420	.00012	-.00008	-.00002	-.00010	.00010	-.00018	-.00010	-.00001	-.00004	.00006	-.00014	.00005
-1.440	.00011	-.00007	-.00002	-.00009	.00009	-.00016	-.00009	-.00001	-.00003	.00006	-.00012	.00005
-1.460	.00010	-.00006	-.00002	-.00009	.00009	-.00015	-.00008	-.00001	-.00003	.00006	-.00011	.00005
-1.480	.00010	-.00005	-.00002	-.00008	.00008	-.00014	-.00008	-.00001	-.00003	.00005	-.00010	.00005
-1.500	.00009	-.00005	-.00001	-.00008	.00007	-.00012	-.00007	-.00001	-.00002	.00005	-.00009	.00004
-1.520	.00008	-.00004	-.00001	-.00007	.00007	-.00011	-.00006	-.00001	-.00002	.00005	-.00008	.00004
-1.540	.00007	-.00004	-.00001	-.00007	.00006	-.00010	-.00006	-.00001	-.00002	.00005	-.00008	.00004
-1.560	.00007	-.00003	-.00001	-.00006	.00006	-.00009	-.00005	-.00000	-.00002	.00004	-.00007	.00004
-1.580	.00006	-.00003	-.00001	-.00006	.00005	-.00009	-.00005	-.00000	-.00001	.00004	-.00006	.00004
-1.600	.00006	-.00002	-.00001	-.00006	.00005	-.00008	-.00004	-.00000	-.00001	.00004	-.00006	.00004
-1.620	.00005	-.00002	-.00001	-.00005	.00005	-.00007	-.00004	-.00000	-.00001	.00004	-.00005	.00003
-1.640	.00005	-.00002	-.00001	-.00005	.00004	-.00006	-.00004	-.00000	-.00001	.00003	-.00004	.00003
-1.660	.00004	-.00001	-.00001	-.00005	.00004	-.00006	-.00003	-.00000	-.00001	.00003	-.00004	.00003
-1.680	.00004	-.00001	-.00001	-.00004	.00004	-.00005	-.00003	-.00000	-.00001	.00003	-.00004	.00003
-1.700	.00004	-.00001	-.00000	-.00004	.00003	-.00005	-.00003	-.00000	-.00000	.00003	-.00003	.00003
-1.720	.00003	-.00001	-.00000	-.00004	.00003	-.00004	-.00002	-.00000	-.00000	.00003	-.00003	.00003
-1.740	.00003	-.00001	-.00000	-.00003	.00003	-.00004	-.00002	-.00000	-.00000	.00002	-.00002	.00002
-1.760	.00003	-.00000	-.00000	-.00003	.00002	-.00004	-.00002	-.00000	-.00000	.00002	-.00002	.00002
-1.780	.00003	-.00000	-.00000	-.00003	.00002	-.00003	-.00002	-.00000	-.00000	.00002	-.00002	.00002
-1.800	.00002	-.00000	-.00000	-.00003	.00002	-.00003	-.00002	-.00000	-.00000	.00002	-.00002	.00002
-1.820	.00002	-.00000	-.00000	-.00003	.00002	-.00003	-.00001	-.00000	-.00000	.00002	-.00002	.00002
-1.840	.00002	-.00000	-.00000	-.00002	.00002	-.00003	-.00001	.00000	.00000	.00002	-.00001	.00002
-1.860	.00002	-.00000	-.00000	-.00002	.00002	-.00002	-.00001	.00000	.00000	.00002	-.00001	.00002
-1.880	.00002	-.00000	-.00000	-.00002	.00001	-.00002	-.00001	.00000	.00000	.00001	-.00001	.00001
-1.900	.00001	.00000	-.00000	-.00002	.00001	-.00002	-.00001	.00000	.00000	.00001	-.00001	.00001
-1.920	.00001	.00000	-.00000	-.00002	.00001	-.00002	-.00001	.00000	.00000	.00001	-.00001	.00001
-1.940	.00001	.00000	-.00000	-.00002	.00001	-.00002	-.00001	.00000	.00000	.00001	-.00001	.00001
-1.960	.00001	.00000	-.00000	-.00001	.00001	-.00001	-.00001	.00000	.00000	.00001	-.00001	.00001
-1.980	.00001	.00000	-.00000	-.00001	.00001	-.00001	-.00001	.00000	.00000	.00001	-.00000	.00001
-2.000	.00001	.00000	-.00000	-.00001	.00001	-.00001	-.00001	.00000	.00000	.00001	-.00000	.00001

xxxxx PI- P ---> PI0 N PLAB = 199.30 TMIN = .0000
KINEMATICS 0 ELAB = 199.30, S = 374.79, W = 19.36, K = 9.66, E1 = 9.66, E2 = 9.70, E3 = 9.66, E4 = 9.70, Q = 9.66

T	DS/DT	P	R	A
-.000000	.015228	.000059	-.001070	.999999
-.020000	.014754	.065050	-.987615	.142773
-.040000	.013598	.074469	-.936838	-.341743
-.060000	.012086	.075738	-.773460	-.629304
-.080000	.010446	.073721	-.590859	-.803400
-.100000	.008830	.069837	-.413903	-.907630
-.120000	.007329	.064813	-.249117	-.966295
-.140000	.005989	.058787	-.097162	-.983531
-.160000	.004829	.051511	.043182	-.997738
-.180000	.003849	.042939	.173585	-.983882
-.200000	.003038	.032855	.295600	-.954747
-.220000	.002376	.020996	.410424	-.911653
-.240000	.001845	.007068	.518748	-.854898
-.260000	.001423	-.009235	.620640	-.784041
-.280000	.001093	-.028202	.715403	-.698143
-.300000	.000836	-.050052	.801416	-.596010
-.320000	.000639	-.074860	.875970	-.476521
-.340000	.000489	-.102450	.935164	-.339075
-.360000	.000375	-.132262	.973951	-.184190
-.380000	.000290	-.163220	.986487	-.014224
-.400000	.000226	-.193642	.966933	.165962
-.420000	.000178	-.221293	.910740	.348686
-.440000	.000143	-.243614	.816229	.523853
-.460000	.000117	-.258184	.685912	.680342
-.480000	.000098	-.263254	.526876	.808145
-.500000	.000084	-.258187	.349790	.900548
-.520000	.000073	-.243572	.166788	.955434
-.540000	.000064	-.220996	-.010933	.975213
-.560000	.000057	-.192586	-.174865	.965574
-.580000	.000052	-.160538	-.319869	.933762
-.600000	.000047	-.126785	-.443904	.887060
-.620000	.000043	-.092825	-.547240	.831812
-.640000	.000040	-.059714	-.631577	.773010
-.660000	.000037	-.028115	-.699307	.714269
-.680000	.000034	.001602	-.753000	.658019
-.700000	.000031	.029273	-.795105	.605765
-.720000	.000029	.054872	-.827800	.558333
-.740000	.000027	.078450	-.852938	.516084
-.760000	.000024	.100102	-.872051	.479069
-.780000	.000022	.119941	-.886383	.447146
-.800000	.000020	.138085	-.896931	.420056
-.820000	.000019	.154645	-.904484	.397483
-.840000	.000017	.169724	-.909665	.379082
-.860000	.000016	.183412	-.912961	.364502
-.880000	.000014	.195792	-.914753	.353401
-.900000	.000013	.206931	-.915338	.345451
-.920000	.000012	.216891	-.914946	.340342
-.940000	.000011	.225725	-.913755	.337786
-.960000	.000010	.233480	-.911906	.337512
-.980000	.000009	.240196	-.909506	.339270
-1.000000	.000008	.245913	-.906640	.342828
-1.020000	.000007	.250666	-.903374	.347969
-1.040000	.000006	.254489	-.899760	.354495
-1.060000	.000006	.257415	-.895842	.362221
-1.080000	.000005	.259480	-.891655	.370974
-1.100000	.000005	.260716	-.887227	.380598
-1.120000	.000004	.261159	-.882586	.390945
-1.140000	.000004	.260846	-.877753	.401882
-1.160000	.000003	.259814	-.872751	.413283
-1.180000	.000003	.258101	-.867599	.425037
-1.200000	.000003	.255749	-.862316	.437040
-1.220000	.000003	.252798	-.856922	.449187
-1.240000	.000002	.249290	-.851435	.461425
-1.260000	.000002	.245269	-.845873	.473648
-1.280000	.000002	.240777	-.840253	.485799
-1.300000	.000002	.235858	-.834595	.497818
-1.320000	.000002	.230556	-.828913	.509653
-1.340000	.000001	.224913	-.823226	.521260
-1.360000	.000001	.218972	-.817549	.532602
-1.380000	.000001	.212773	-.811897	.543645
-1.400000	.000001	.206356	-.806285	.554366
-1.420000	.000001	.199760	-.800726	.564742
-1.440000	.000001	.193021	-.795233	.574759
-1.460000	.000001	.186175	-.789816	.584405
-1.480000	.000001	.179255	-.784487	.593673
-1.500000	.000001	.172292	-.779254	.602560
-1.520000	.000001	.165315	-.774126	.611064
-1.540000	.000001	.158351	-.769110	.619189
-1.560000	.000000	.151425	-.764212	.626938
-1.580000	.000000	.144559	-.759436	.634318
-1.600000	.000000	.137775	-.754787	.641338
-1.620000	.000000	.131092	-.750267	.648008
-1.640000	.000000	.124524	-.745879	.654337
-1.660000	.000000	.118089	-.741625	.660339
-1.680000	.000000	.111798	-.737503	.666026
-1.700000	.000000	.105663	-.733515	.671410
-1.720000	.000000	.099693	-.729659	.676505
-1.740000	.000000	.093898	-.725935	.681324
-1.760000	.000000	.088282	-.722340	.685880
-1.780000	.000000	.082852	-.718872	.690188
-1.800000	.000000	.077612	-.715528	.694260
-1.820000	.000000	.072564	-.712305	.698108
-1.840000	.000000	.067712	-.709201	.701747
-1.860000	.000000	.063055	-.706212	.705187
-1.880000	.000000	.058594	-.703334	.708440
-1.900000	.000000	.054328	-.700564	.711519
-1.920000	.000000	.050255	-.697897	.714433
-1.940000	.000000	.046375	-.695331	.717192
-1.960000	.000000	.042685	-.692861	.719807
-1.980000	.000000	.039181	-.690483	.722287
-2.000000	.000000	.035860	-.688194	.724640

CROSS SECTION = .002067

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***** PI- P ---> PIO N                                                            PLAB = 199.30      TMIN =  .0000 *****

FITS TO EXPERIMENTAL DATA


DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES.A.V. ET AL.. PHYS. REV. LETTS. 37 (1976) 76.              CHISQ =   4312.66980

    T VALUES    -.00200 -.00600 -.01200 -.02000 -.02800 -.04000 -.05600 -.07200 -.09000 -.11000 -.14000 -.18000 -.22000 -.26000 -.31000
 THEORETICAL     .01522  .01518  .01505  .01475  .01435  .01360  .01240  .01111  .00963  .00806  .00599  .00385  .00238  .00142  .00073
EXPERIMENTAL     .01040  .01010  .01100  .01130  .01130  .01060  .00930  .00884  .00686  .00579  .00388  .00240  .00136  .00071  .00031
EXPT. ERRORS     .00040  .00040  .00040  .00040  .00040  .00030  .00030  .00026  .00020  .00018  .00011  .00008  .00006  .00004  .00002
CHI SQUAREDS    ***************************74.5666258.2537099.87430*********75.97853**********************************************************

    T VALUES    -.37000 -.45000 -.55000 -.65000 -.75000 -.90000-1.10000-1.30000
 THEORETICAL     .00033  .00013  .00006  .00004  .00003  .00001  .00000  .00000
EXPERIMENTAL     .00012  .00003  .00001  .00001  .00001  .00000  .00000  .00000
EXPT. ERRORS     .00001  .00001  .00000  .00000  .00000  .00000  .00000  .00000
CHI SQUAREDS    ***************************************72.8909322.8340020.63132
*********** EXCEEDS Y UPPER BOUND
*********** EXCEEDS Y LOWER BOUND
*********** EXCEEDS Y UPPER BOUND
*********** EXCEEDS Y LOWER BOUND
       .990 EXCEEDS Y UPPER BOUND
      -.450 EXCEEDS Y LOWER BOUND
       .001 EXCEEDS Y LOWER BOUND
       .001 EXCEEDS Y LOWER BOUND
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      0.000 EXCEEDS Y LOWER BOUND

  FCN VALUE      CALLS    TIME      EDM        INT.EXT. PARAMETER      VALUE          ERROR        INTERN.VALUE   INT.STEP SIZE
 .2264738E+05      3     60.32    0.             1    1  BRHON          .19000E+01    .10000E+01      .26993E+00     .80755E+00
                                                 2    2  LHRHON         .59900E+01    .10000E+01      .19932E+00     .20567E+00
                                                 3    3  CN1           -.13220E+01    .10000E+01     -.10754E+00     .34216E+00
                                                 4    4  CN2           -.10000E+00    .30000E+00     -.10017E+00     .30644E+00
                                                 5    5  CTN1          0.             .20000E+00     0.              .20136E+00
                                                 6    6  CTN2          -.80000E+00    .10000E+01     -.41152E+00     .60997E+00
                                                 7    7  BHRHOF         .30000E+02    .10000E+02     0.              .52360E+00
                                                 8    8  LHRHOF         .14000E+01    .10000E+01     -.45560E+00     .47864E+00
                                                 9    9  CF1          --.80000E+00    .10000E+01     -.41152E+00     .60997E+00
                                                10   10  CF2            .12500E+01    .10000E+01     -.52360E+00     .50980E+00
                                                11   11  CTF1          0.             .20000E+00     0.              .20136E+00
                                                12   12  CTF2           .80000E+01    .50000E+01      .66716E-01     .73336E+00
                                                     13  LAMBDA        0.
                                                     14  GAMMA         0.

  FCN VALUE      CALLS    TIME      EDM        INT.EXT. PARAMETER      VALUE          ERROR        INTERN.VALUE   INT.STEP SIZE
 .2264738E+05      5     60.59    0.             1    1  BRHON          .19000E+01    .10000E+01      .26993E+00     .80755E+00
                                                 2    2  LHRHON         .59900E+01    .10000E+01      .19932E+00     .20567E+00
                                                 3    3  CN1           -.13220E+01    .10000E+01     -.10754E+00     .34216E+00
                                                 4    4  CN2           -.10000E+00    .30000E+00     -.10017E+00     .30644E+00
                                                 5    5  CTN1          0.             .20000E+00     0.              .20136E+00
                                                 6    6  CTN2          -.80000E+00    .10000E+01     -.41152E+00     .60997E+00
                                                 7    7  BHRHOF         .30000E+02    .10000E+02     0.              .52360E+00
                                                 8    8  LHRHOF         .14000E+01    .10000E+01     -.45560E+00     .47864E+00
                                                 9    9  CF1           -.80000E+00    .10000E+01     -.41152E+00     .60997E+00
                                                10   10  CF2            .12500E+01    .10000E+01     -.52360E+00     .50980E+00
                                                11   11  CTF1          0.             .20000E+00     0.              .20136E+00
                                                12   12  CTF2           .80000E+01    .50000E+01      .66716E-01     .73336E+00
                                                     13  LAMBDA        0.
                                                     14  GAMMA         0.

***********
***  2*****EXIT
***********

CALL TO FCN WITH IFLAG = 3
```

***** PI- P —> PI0 N   PLAB = 6.00   TMIN = .0000 *****

FITS TO EXPERIMENTAL DATA

AMPLITUDE ANALYSIS - DATA TAKEN FROM AMBATS,I. ET AL., PHYS. REV. D9 (1974) 1179.   CHI SQUARED = 199.96289

PERPENDICULAR COMPONENT OF HELICITY NONFLIP T CHANNEL I=1   CHI SQUARED = 5.20808

T VALUES	0.00000	-.05000	-.15000	-.25000	-.35000	-.45000	-.55000
THEORETICAL	.37203	.21875	.04899	-.02332	-.05113	-.05889	-.05790
EXPERIMENTAL	.38000	.19600	.07100	-.02900	-.04400	-.02600	-.01500
EXPT. ERRORS	.08000	.07700	.04800	.03100	.03400	.02400	.02500
CHI SQUAREDS	.00992	.08729	.21031	.03352	.04399	1.87816	2.94489

PARALLEL COMPONENT OF HELICITY NONFLIP T-CHANNEL I=1   CHI SQUARED = 2.66552

T VALUES	0.00000	-.05000	-.15000	-.25000	-.35000	-.45000	-.55000
THEORETICAL	.17109	.08325	-.00121	-.02648	-.02882	-.02333	-.01609
EXPERIMENTAL	.20000	.08500	.00500	-.04400	-.04100	-.03600	-.03600
EXPT. ERRORS	.06000	.02800	.02400	.02000	.01800	.02600	.02100
CHI SQUAREDS	.23214	.00390	.06686	.76780	.45810	.23741	.89931

PERPENDICULAR COMPONENT OF HELICITY FLIP T-CHANNEL I=1   CHI SQUARED = 190.77999

T VALUES	0.00000	-.05000	-.15000	-.25000	-.35000	-.45000	-.55000
THEORETICAL	0.00000	.33412	.34461	.25228	.15627	.07932	.02457
EXPERIMENTAL	0.00000	.34500	.30300	.18900	.10600	.04600	.01500
EXPT. ERRORS	*********	.06200	.01100	.00700	.00600	.00700	.00700
CHI SQUAREDS	0.00000	.03078	14.30808	81.72295	70.19825	22.65246	1.86748

PARALLEL COMPONENT OF HELICITY FLIP T-CHANNEL I=1   CHI SQUARED = 1.30931

T VALUES	0.00000	-.05000	-.15000	-.25000	-.35000	-.45000	-.55000
THEORETICAL	0.00000	.20146	.19574	.13552	.08034	.04054	.01520
EXPERIMENTAL	0.00000	.22000	.19000	.12300	.06500	.04800	.03000
EXPT. ERRORS	*********	.11000	.02900	.02600	.03100	.01600	.02000
CHI SQUAREDS	0.00000	.02840	.03912	.23199	.24485	.21739	.54756

POLARIZATION - DATA TAKEN FROM HILL,D. ET AL., PHYS. REV. LETTS. 30 (1973) 239.   CHI SQUARED = 240.82869

T VALUES	-.15000	-.25000	-.35000	-.45000	-.55000	-.65000	-.75000	-.85000	-.95000	-1.05000	-1.15000	-1.25000	-1.35000	-1.45000	-1.65000
THEORETICAL	.12547	.08451	.02304	-.08988	-.21817	-.09369	.10884	.21868	.28302	.33191	.37619	.41932	.46137	.50014	.54849
EXPERIMENTAL	.13000	.20000	.13000	.15000	.17000	.02000	-.07000	-.05000	0.00000	-.03000	.05000	.08000	0.00000	-.07000	.14000
EXPT. ERRORS	.07000	.06000	.05000	.12000	.11000	.07000	.07000	.07000	.05000	.05000	.08000	.07000	.11000	.09000	.13000
CHI SQUAREDS	.00419	3.70482	4.57606	3.99585	12.45280	2.63804	6.52697	14.73236	32.04112	52.39012	16.62459	23.49721	17.59182	40.13089	9.92186

POLARIZATION - DATA TAKEN FROM DROBNIS,D.D. ET AL., PHYS. REV. LETTS. 20 (1968) 274.   CHI SQUARED = 6.64186

T VALUES	-.07100	-.12800	-.20200	-.29400	-.40500
THEORETICAL	.15333	.13372	.10530	.06158	-.03075
EXPERIMENTAL	0.00000	.08000	.19000	.05000	.22000
EXPT. ERRORS	.10000	.09000	.10000	.12000	.14000
CHI SQUAREDS	2.35089	.35624	.71736	.00931	3.20805

POLARIZATION - DATA TAKEN FROM BONAMY,P. ET AL., NUCL. PHYS. B16 (1970) 335. (5.9 GEV/C)   CHI SQUARED = 3.98990

T VALUES	-.03100	-.06000	-.09000	-.12000	-.16500	-.22500
THEORETICAL	.15293	.15585	.14744	.13669	.11978	.09573
EXPERIMENTAL	.11400	.19800	.18400	.13700	.18000	.08000
EXPT. ERRORS	.04500	.04700	.04600	.04800	.04500	.13000
CHI SQUAREDS	.74838	.80421	.63159	.00004	1.79102	.01465

POLARIZATION - DATA TAKEN FROM BONAMY,P. ET AL., NUCL. PHYS. B52 (1973) 392. (4.9 GEV/C)   CHI SQUARED = 52.97886

T VALUES	-.15000	-.25000	-.35000	-.50000	-.75000	-1.05000	-1.35000	-1.75000
THEORETICAL	.12547	.08451	.02304	-.16554	.10884	.33191	.46137	.54794
EXPERIMENTAL	.27000	.37000	.44000	.74000	.24000	0.00000	.10000	-.45000
EXPT. ERRORS	.12000	.11000	.15000	.25000	.13000	.12000	.14000	.34000
CHI SQUAREDS	1.45066	6.73579	7.72687	13.11990	1.01799	7.65007	6.66262	8.61495

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM STIRLING,A.V. ET AL., PHYS. REV. LETTS. 14 (1965) 763.   CHISQ = 583.87996

T VALUES	-.01000	-.03000	-.05000	-.07000	-.09000	-.12000	-.16000	-.21000	-.28000	-.36000	-.45000	-.55000	-.65000	-.80000
THEORETICAL	.36271	.39880	.41401	.41288	.39953	.36425	.30285	.22313	.13046	.06215	.02389	.00889	.00611	.00702
EXPERIMENTAL	.37400	.43000	.41100	.41200	.39700	.33200	.25200	.16400	.08500	.03200	.01240	.00570	.00610	.00880
EXPT. ERRORS	.01300	.01300	.01300	.01300	.01300	.00900	.00800	.00600	.00400	.00200	.00150	.00100	.00100	.00140
CHI SQUAREDS	.75463	5.75856	.05377	.00460	.03792	12.83800	40.40704	97.10682	*********	*********	58.71790	10.18742	.00017	1.61381

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM SONDEREGGER,P. ET AL., PHYS. LETTS. 20 (1966) 75.   CHISQ = 216.40127

T VALUES	-.02500	-.07500	-.12500	-.17500	-.22500	-.27500	-.35000	-.45000	-.60000	-.80000	-1.00000	-1.20000	-1.40000	-1.60000	-1.85000
THEORETICAL	.39192	.41054	.35718	.27850	.20086	.13606	.06864	.02389	.00670	.00702	.00658	.00443	.00253	.00139	.00071
EXPERIMENTAL	.40400	.39600	.33700	.22000	.14200	.08700	.04100	.01300	.00850	.00860	.01100	.01000	.00600	.00290	.00150
EXPT. ERRORS	.02000	.02000	.01500	.01500	.01000	.00800	.00400	.00200	.00100	.00100	.00150	.00150	.00100	.00070	.00040
CHI SQUAREDS	.36475	.52855	1.80918	15.20981	34.64359	37.61443	47.74686	29.67058	3.23514	2.49167	8.68805	13.79720	12.01831	4.68360	3.89953

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM WAHLIG,M.A. AND MANNELLI,I., PHYS. REV. 168 (1968) 1515.   CHISQ = 29.49369

T VALUES	-.02000	-.06000	-.11000	-.17000	-.24000	-.33000	-.44000	-.56000	-.69000	-.83000
THEORETICAL	.38366	.41522	.37753	.28662	.17981	.08327	.02666	.00827	.00621	.00715
EXPERIMENTAL	.38200	.40200	.25200	.19400	.12400	.04000	.01700	.00200	.01000	.01000
EXPT. ERRORS	.06400	.05900	.04600	.03900	.02600	.01600	.00800	.00400	.00700	.00600
CHI SQUAREDS	.00067	.05022	7.44751	5.64001	4.60687	7.31530	1.45781	2.45717	.29302	.22511

DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM MANNELLI,I. ET AL., PHYS. REV. LETTS. 14 (1965) 408.   CHISQ = 58.61084

T VALUES	-.02140	-.06250	-.10000	-.14110	-.18040	-.22140	-.26250	-.30000	-.33930	-.37860
THEORETICAL	.38612	.41495	.38941	.33297	.26976	.20610	.15078	.10969	.07619	.05143
EXPERIMENTAL	.34010	.34440	.36650	.23140	.16340	.15940	.09570	.02320	.06350	.08250
EXPT. ERRORS	.03090	.04080	.03330	.02740	.02160	.02330	.02700	.03430	.03100	.06360
CHI SQUAREDS	2.21771	2.98992	.47349	13.74232	24.24434	4.01696	4.16219	6.35775	.16750	.23866

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***** PI- P --> PIO N                                              PLAB =  20.80      TMIN =  .0000 *****

FITS TO EXPERIMENTAL DATA


DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.              CHISQ =   1264.30775

    T VALUES    -.00200 -.00600 -.01200 -.02000 -.02800 -.04000 -.05600 -.07200 -.09000 -.11000 -.14000 -.18000 -.22000 -.26000 -.31000
 THEORETICAL     .11770  .12002  .12282  .12538  .12674  .12685  .12404  .11871  .11066  .10021  .08349  .06223  .04428  .03033  .01805
EXPERIMENTAL     .10400  .10500  .12100  .12000  .13700  .13400  .12600  .11600  .10800  .09210  .07430  .05090  .03370  .02200  .01160
EXPT. ERRORS     .00500  .00500  .00500  .00500  .00500  .00400  .00400  .00400  .00300  .00300  .00210  .00150  .00120  .00090  .00050
CHI SQUAREDS    7.50683 9.02093  .13183 1.15696 4.20945 3.19824  .24034  .45844  .78662 7.3150719.1421257.0192177.7642985.58708********

    T VALUES    -.37000 -.45000 -.55000 -.65000 -.75000 -.90000-1.10000-1.30000
 THEORETICAL     .00920  .00363  .00142  .00096  .00084  .00064  .00034  .00015
EXPERIMENTAL     .00480  .00144  .00044  .00036  .00051  .00050  .00030  .00016
EXPT. ERRORS     .00030  .00013  .00007  .00006  .00007  .00005  .00004  .00003
CHI SQUAREDS    ******************************99.6315922.42868 7.81654 1.03099  .04754


***** PI- P --> PIO N                                              PLAB =  40.80      TMIN =  .0000 *****

FITS TO EXPERIMENTAL DATA


DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.              CHISQ =   2945.67045

    T VALUES    -.00200 -.00600 -.01210 -.02000 -.02800 -.04000 -.05600 -.07200 -.09000 -.11000 -.14000 -.18000 -.22000 -.26000 -.31000
 THEORETICAL     .06456  .06539  .06627  .06681  .06676  .06571  .06293  .05904  .05386  .04765  .03836  .02736  .01866  .01227  .00697
EXPERIMENTAL     .05060  .05780  .05520  .05990  .06210  .06210  .05900  .05420  .04800  .04010  .03140  .02020  .01310  .00760  .00424
EXPT. ERRORS     .00210  .00230  .00180  .00190  .00190  .00160  .00160  .00150  .00120  .00110  .00080  .00050  .00040  .00030  .00018
CHI SQUAREDS   44.2201410.8769937.8125113.23627 6.00778 5.10453 6.0458610.4175123.8500347.0956675.79483****************************************

    T VALUES    -.37000 -.45000 -.55000 -.65000 -.75000 -.90000-1.10000-1.30000
 THEORETICAL     .00340  .00132  .00054  .00036  .00029  .00019  .00008  .00003
EXPERIMENTAL     .00173  .00050  .00009  .00010  .00008  .00007  .00004  .00002
EXPT. ERRORS     .00011  .00004  .00002  .00002  .00002  .00001  .00001  .00001
CHI SQUAREDS   ************************************************28.64120 5.89800


***** PI- P --> PIO N                                              PLAB =  64.40      TMIN = -.0000 *****

FITS TO EXPERIMENTAL DATA


DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.              CHISQ =   3114.30307

    T VALUES    -.00200 -.00600 -.01200 -.02000 -.02800 -.04000 -.05600 -.07200 -.09000 -.11000 -.14000 -.18000 -.22000 -.26000 -.31000
 THEORETICAL     .04275  .04310  .04339  .04340  .04302  .04188  .03955  .03661  .03291  .02865  .02254  .01560  .01034  .00661  .00364
EXPERIMENTAL     .03200  .03590  .03450  .03680  .03690  .03700  .03650  .03070  .02840  .02290  .01700  .01060  .00680  .00420  .00209
EXPT. ERRORS     .00130  .00140  .00110  .00120  .00120  .00100  .00100  .00090  .00080  .00060  .00040  .00030  .00020  .00018  .00010
CHI SQUAREDS   68.4238226.4532165.3448530.2263626.0456423.84810 9.3022243.0701131.7469591.97249****************************************

    T VALUES    -.37000 -.45000 -.55000 -.65000 -.75000 -.90000-1.10000-1.30000
 THEORETICAL     .00173  .00067  .00029  .00019  .00014  .00008  .00004  .00001
EXPERIMENTAL     .00075  .00020  .00006  .00004  .00004  .00003  .00002  .00001
EXPT. ERRORS     .00006  .00002  .00001  .00001  .00001  .00001  .00000  .00000
CHI SQUAREDS   ****************************************85.7423218.1579818.64508


***** PI- P --> PIO N                                              PLAB = 100.70      TMIN =  .0000 *****

FITS TO EXPERIMENTAL DATA


DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.              CHISQ =   4574.43945

    T VALUES    -.00200 -.00600 -.01200 -.02000 -.02800 -.04000 -.05600 -.07200 -.09000 -.11000 -.14000 -.18000 -.22000 -.26000 -.31000
 THEORETICAL     .02846  .02857  .02858  .02836  .02791  .02687  .02503  .02286  .02026  .01737  .01336  .00898  .00578  .00360  .00193
EXPERIMENTAL     .02030  .02110  .02080  .02150  .02260  .02210  .02050  .01860  .01610  .01290  .00950  .00587  .00364  .00193  .00099
EXPT. ERRORS     .00080  .00080  .00070  .00070  .00070  .00060  .00060  .00050  .00040  .00040  .00020  .00017  .00013  .00009  .00005
CHI SQUAREDS   ********87.17586********96.0688857.4426363.2855956.9992872.71893************************************************************

    T VALUES    -.37000 -.45000 -.55000 -.65000 -.75000 -.90000-1.10000-1.30000
 THEORETICAL     .00089  .00035  .00015  .00010  .00007  .00004  .00002  .00001
EXPERIMENTAL     .00037  .00009  .00002  .00002  .00002  .00002  .00000  .00000
EXPT. ERRORS     .00003  .00001  .00001  .00000  .00001  .00000  .00000  .00000
CHI SQUAREDS   ********************************95.9281057.9921849.55923 8.35003


***** PI- P --> PIO N                                              PLAB = 150.20      TMIN = 0.0000 *****

FITS TO EXPERIMENTAL DATA


DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.              CHISQ =   5043.20430

    T VALUES    -.00200 -.00600 -.01200 -.02000 -.02800 -.04000 -.05600 -.07200 -.09000 -.11000 -.14000 -.18000 -.22000 -.26000 -.31000
 THEORETICAL     .01974  .01974  .01964  .01935  .01891  .01804  .01660  .01499  .01311  .01108  .00835  .00547  .00344  .00209  .00109
EXPERIMENTAL     .01340  .01400  .01460  .01480  .01560  .01450  .01320  .01190  .01000  .00820  .00554  .00354  .00210  .00115  .00053
EXPT. ERRORS     .00050  .00060  .00050  .00050  .00050  .00040  .00040  .00030  .00030  .00020  .00015  .00011  .00008  .00006  .00003
CHI SQUAREDS   ********91.47195********82.8604043.9209878.3268972.19686****************************************************************

    T VALUES    -.37000 -.45000 -.55000 -.65000 -.75000 -.90000-1.10000-1.30000
 THEORETICAL     .00050  .00019  .00009  .00006  .00004  .00002  .00001  .00000
EXPERIMENTAL     .00020  .00005  .00001  .00001  .00000  .00001  .00000  .00000
EXPT. ERRORS     .00002  .00001  .00000  .00000  .00000  .00000  .00000  .00000
CHI SQUAREDS   ****************************************66.0061425.64627 4.96929


***** PI- P --> PIO N                                              PLAB = 199.30      TMIN =  .0000 *****

FITS TO EXPERIMENTAL DATA


DIFFERENTIAL CROSS SECTION - DATA TAKEN FROM BARNES,A.V. ET AL., PHYS. REV. LETTS. 37 (1976) 76.              CHISQ =   4312.66980

    T VALUES    -.00200 -.00600 -.01200 -.02000 -.02800 -.04000 -.05600 -.07200 -.09000 -.11000 -.14000 -.18000 -.22000 -.26000 -.31000
 THEORETICAL     .01522  .01518  .01505  .01475  .01435  .01360  .01240  .01111  .00963  .00806  .00599  .00385  .00238  .00142  .00073
EXPERIMENTAL     .01040  .01010  .01100  .01130  .01130  .01060  .00930  .00884  .00686  .00579  .00388  .00240  .00136  .00071  .00031
EXPT. ERRORS     .00040  .00040  .00040  .00040  .00040  .00030  .00030  .00026  .00020  .00018  .00011  .00008  .00006  .00004  .00002
CHI SQUAREDS   ************************74.5666258.2537099.87430********75.97853************************************************************

    T VALUES    -.37000 -.45000 -.55000 -.65000 -.75000 -.90000-1.10000-1.30000
 THEORETICAL     .00033  .00013  .00006  .00004  .00003  .00001  .00000  .00000
EXPERIMENTAL     .00012  .00003  .00001  .00001  .00001  .00000  .00000  .00000
EXPT. ERRORS     .00001  .00001  .00000  .00000  .00000  .00000  .00000  .00000
CHI SQUAREDS   ****************************************72.8909322.8340020.63132

   FCN VALUE      CALLS     TIME      EDM        INT.EXT. PARAMETER      VALUE          ERROR        INTERN.VALUE   INT.STEP SIZE
  .2264738E+05      5      61.17     0.             1   1  BRHON        .19000E+01    .10000E+01     .26993E+00     .80755E+00
                                                    2   2  LHRHON       .59900E+01    .10000E+01     .19932E+00     .20567E+00
                                                    3   3  CN1         -.13220E+01    .10000E+01    -.10754E+00     .34216E+00
                                                    4   4  CN2         -.10000E+00    .30000E+00    -.10017E+00     .30644E+00
                                                    5   5  CTN1        0.             .20000E+00    0.              .20136E+00
                                                    6   6  CTN2        -.80000E+00    .10000E+01    -.41152E+00     .60997E+00
                                                    7   7  BHRHOF       .30000E+02    .10000E+02    0.              .52360E+00
                                                    8   8  LHRHOF       .14000E+01    .10000E+01    -.45560E+00     .47864E+00
                                                    9   9  CF1         -.80000E+00    .10000E+01    -.41152E+00     .60997E+00
                                                   10  10  CF2          .12500E+01    .10000E+01    -.52360E+00     .50980E+00
                                                   11  11  CTF1        0.             .20000E+00    0.              .20136E+00
                                                   12  12  CTF2         .80000E+01    .50000E+01     .66716E-01     .73336E+00
                                                       13  LAMBDA      0.
                                                       14  GAMMA       0.
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1                   4
PI- P —> PIO N (MINCHI RUN 0001)                                                60.354
         1 BRHON       .1900E+01 .1000E+010.            .3000E+01
         2 LHRHON      .5990E+01 .1000E+010.            .1000E+02
         3 CN1        -.1322E+01 .1000E+01-.4000E+01 .2000E+01
         4 CN2        -.1000E+00 .3000E+00-.1000E+01 .1000E+01
         5 CTN1       0.         .2000E+00-.1000E+01 .1000E+01
         6 CTN2       -.8000E+00 .1000E+01-.2000E+01 .2000E+01
         7 BHRHOF      .3000E+02 .1000E+02 .1000E+02 .5000E+02
         8 LHRHOF      .1400E+01 .1000E+010.            .5000E+01
         9 CF1        -.8000E+00 .1000E+01-.2000E+01 .2000E+01
        10 CF2         .1250E+01 .1000E+010.            .5000E+01
        11 CTF1       0.         .2000E+00-.1000E+01 .1000E+01
        12 CTF2        .8000E+01 .5000E+010.            .1500E+02
        13 LAMBDA     0.         0.
        14 GAMMA      0.         0.

CALL FCN            6
EXIT
```