Linear Collider
Beam Instrumentation Welcome

Inaugural IPBI Working Group Meeting
June 26th, 2002
SLAC

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e^+e^- electroweak physics

- m_Z, Γ_Z (LEP I) Energy Lumi
- m_W (LEP II) Energy
- $\sin^2\theta_w$ (SLC) Polarization

Dependent upon Beam Instrumentation

LCBI Mandate

Ensure adequate instrumentation for physics needs!

Principle LCBI Topics (L,E,P)

- Luminosity spectrum dL/dE and scale $\int L dt$
- Beam energy scale
- Beam polarization

Follow interests of WG members...

Working Group Activities

Current Tasks

- Identify driving physics issues
- Explore/propose candidate solutions
- Work towards a concrete plan
- Attempt to guide/coordinate future study
- Be proactive both locally and globally

⇛ Ensure BI issues are understood and appreciated

Working Group Interactions

- Much work has already been done...

  Understand and assimilate knowledge
- Significant overlap with other efforts

  Accelerator, Beam Delivery,

  Detector Groups, Physics Groups

June 26th Meeting

Today's Goals

- Capture new LC energy (here and abroad)
- Consolidate what we know today
- Identify what we do not know
- Plan the near-future work
- Bring together disparate knowledge and ideas

⇛ Discussion is emphasized!

General BI Questions

Measurement time scales

- Luminosity averaged - months
- Operator tuning - minutes
- Train-to-train - 10 ms
- Bunch-to-bunch - 1 ns

Different requirements absolute vs. relative

Correlations between L, E, P need to be understood

Measurement Location

- At IP (luminosity weighted)
- Near IP in final focus (upstream/downstream)
- Elsewhere in machine

Measurement Frequency

- Every pulse - in collision
- Sampled (dropouts?)
- Dedicated runs

⇛ How much time needed for calibration?

Must compare physics needs to operational needs...

Agenda

9:15 - 10:45	Machine Requirements
	M. Ross
10:45 - 12:00	Beam Energy
	E. Torrence
12:00 - 1:15	Lunch
1:15 - 1:30	Report from Durham
	J. Sheppard
1:30 - 2:30	Polarization
	M. Woods
2:45 - 4:15	Luminosity
	H. Yamamoto (for D. Cinabro)
4:15 - 5:00	Discussion & Planning
6:00 -	Dinner