

*“I hear the roar of the big machine,
Two worlds and in-between...”*

Low Emittance Transport and Beam Dynamics (WG1)

Snowmass Meeting

What's new since KEK Meeting

The entire WG is new!

Old WG1 (Parameters and Overall Design) → GG1

New WG1 areas of interest:

- Emittance preservation from DR exit to IP
 - Studying entire region's design from perspective of tunability and stabilization
 - Ensuring that instrumentation and controls necessary to achieve design luminosity are included in design

Working Group Co-Convenors

- Kiyoshi Kubo (KEK)
- Daniel Schulte (CERN)
- PT (SLAC)

Motivation

- The ILC will be a *very expensive* science facility
- The ILC is only interesting if it can deliver *both* the energy *and* the integrated luminosity at a tolerably low cost
- Every effort should be made to ensure that the luminosity goals can be achieved, at a priority level comparable to the energy and cost goals

WG1 Goals for Snowmass – Items to be Completed

- Recommendation of a Bunch Compressor configuration (1 stage, 2 stage...)
- Recommendation of a main linac configuration (with WG2, WG5, and GG4)
 - quad spacing
 - cavities per cryomodule
 - quads in RF cryomodules or separate ones
 - straight, bent, or curved tunnel
 - Consider one recommendation for TTC Cavity, and a separate one for low-loss / high-gradient / high wakefield cavity?

WG1 Goals for Snowmass (2)

- Agreement on nominal and “operating plane” beam parameters for LET and IP (with GG1)
- Agreement on a plan and schedule for completion of work from now until end 2006
 - Studies for BCD
 - Studies for RDR
- Development of some “nuts and bolts” standards for exchange of technical information
 - deck formats and repository, etc.

WG1 Goals – Work to be Started at Snowmass

- Make a plan for delivering tolerances and specifications to costing/engineering groups
 - What information is needed? By whom? By when? Who will provide it?
- Review assumptions in several areas
 - Wakefield models
 - Ground motion models
 - RF stability
 - Fast MPS [“Hazard Avoidance Logic (HAL)”]
 - Instrumentation performance
- Review progress on full-system static + dynamic simulations, make plan for completion by end of 2006

Plan for the Next 2 Weeks

- Week 1: Mostly presentations
 - Up-to-date picture of studies performed so far
 - Figure out what's not known and needed for recommendations
- Week 2: More interactive
 - Performing and discussing studies
 - Preparing recommendations
 - Making the plan for the next 16 months

Week 1 Schedule

Meetings take place in the Daly room of the Mountain Chalet unless otherwise noted.

08:30 – 09:00	Bunch Compressors		Linac Dynamics
09:00 – 09:30	Chair: Kubo		With WG2
10:00 – 10:30	Bunch Comp (ctd)	CM Vibration w/WG2	Linac Dynamics
10:30 – 11:00	RF Stability w/WG2	(Conf Ctr/Hoagland)	With WG2 (ctd)
11:00 – 11:30	(Conf Ctr/Hoagland)	Integrated	Chair: Schulte
11:30 – 12:00	Overall Layout	Simulations	(Conf Ctr/Hoagland)
13:30 – 14:00	Overall Layout (ctd)	Integrated	Linac Module w/ WG2
14:00 – 14:30	Chair: Schulte	Simulations (ctd)	(Conf Ctr/Hoagland)
14:30 – 15:00	Survey/Alignment	Chair: Kubo	GM + BDS w/WG4 (Conf Ctr/Erickson)
15:00 – 15:30	Chair: PT		Chair: PT

Week 1 Speakers (Tentative and Probably Incomplete List)

- G. Grzelak (Oxford)
- J. Jones (Daresbury)
- R. Jones (SLAC)
- E. Kim (PAL)
- Y. Kim (DESY)
- K. Kubo (KEK)
- N. Phinney (SLAC)
- J. Prenting (DESY)
- K. Ranjan (FNAL)
- A. Reichold (Oxford)
- D. Schulte (CERN)
- J. Smith (Cornell)
- N. Solyak (FNAL)
- PT (SLAC)
- N. Walker (DESY)
- G. White (QMUL)