

2005/04/12

To: Distribution  
From: K.Kubo and N.Toge  
Subject: Minutes of the LC All-Hands Meeting at KEK

Date: Tuesday, April 12, 2005  
Time: 09:00 – 10:25  
Place: KEK Bldg 3, 1F, Seminar Hall  
Chair: K.Kubo

## 1. KEK Organization

- Yokoya explained the new internal organization at KEK concerning the ILC accelerator development. See attachment.
  - The total head count is ~ 70, including non-full timers. The list corresponds to ~30FTE. Note, however, that non-KEK members are not counted here.
  - The management chain above this list has two strings,
    1. One, from the Director General (Y.Totsuka) of KEK through the Accelerator Lab Head (Y.Kamiya) and the Division III head (A.Enomoto), mainly concerning domestic technical matters.
    2. The other, the KEK DG through the LC Office Head (F.Takasaki), mainly concerning foreign or international matters.
- Discussions and Comments;
  - C: The development schedule, goals and milestones should be clarified, be made openly available, and be tracked all the time.
  - C: A development review will be called likely before Summer.

## 2. ILC Parameter Discussions

- K.Kubo reviewed the discussion on the ILC parameters that are currently ongoing. His presentation material (PDF file) can be downloaded and viewed from:  
<http://lcdev.kek.jp/~kkubo/reports/parameter/Parameter-for-AllHand-mtg-3a.pdf>
- The accelerating gradient values of 30, 35, 40MV/m are considered.
  - The choice of the gradient is considered more or less orthogonal to the luminosity optimization, although,
  - The gradient choice affects the number of cavities per cryostat, since the output power from the klystrons is assumed fixed as 10MW.
  - The working assumption for the future “energy upgrade” is to extend the active linac length rather than to raise the field gradient in the already-existing-part of the main linacs.
- The “design luminosity” is  $2 \times 10^{34} \text{ cm}^{-2} \text{ s}^{-1}$ , responding to the physics demand.
- The guiding principle in the present parameter discussion is “to define an operating plane where a number of different machine configurations achieve the same peak luminosity”. This relates to the bunch charge, emittance or the number of bunches per pulse, which primarily affect the injector and BDS designs. The main linac specifications are mostly unaffected. See Kubo’s presentation material for more details.

- Discussions and Comments:
  - C: Physicists would like see the collision energy spectra when  $\delta_B$  is stated to change.
  - Q: What is the rationale for the present choice ( $\sim 1\text{ms}$ ) of  $s_b N_b$ , which is unlikely to be revisited?
  - A: Primarily the limitation of the circumference of the damping rings. It is also motivated by the desire to freeze the specifications for the klystrons.
  - Q: Any specific efforts towards clarifying the tolerances (alignment, parameters, etc) for the hardware installation and operation?
  - C: The tools developed during TRCII are applicable.
  - C: Some considerations are implicitly given in the sense that, for instance, “high-Y” case assumes a larger linac emittance growth.
  - A: Some work is necessary.
  - Q: Is it not better and more practical to define the “ultimate luminosity goal” and enforce the required performance on the subsystem members, then see what happens?
  - C: We should note that “unfreezing” of the TESLA parameters took place only recently for starting the global parameter discussion, which is exactly what is going on. The debate had better converge soon, though..

**Next meeting: T.B.A.**