

January 26, 1998

To: SLAC-KEK Linear Collider International Study Group
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Subject: Statements on the Goals of the First SLAC-KEK LC ISG Meeting, January, 1998

1 Mission of this ISG Meeting

This is the first ISG meeting between SLAC and KEK, which is to be formed within the framework of the "SLAC-KEK MOU on an International Linear Collider Optimization Study Group." The SLAC-KEK ISG MOU is the definitive document that states the task of the ISG and definitions of its pre-design activities.

2 Goals of this ISG Meeting

The primary focus of this ISG meeting (January, 1998) is the following:

- a) Begin identification of overall technical design strategies and options for a TeV-scale linear collider based on room-temperature RF technologies. This is so as to start joint efforts towards development of mutually compatible system concepts and hardware components at both SLAC and KEK.
- b) Layout the plans for joint development of system concepts and hardware components in the following areas:
 - Main linacs RF power compression and distribution,
 - Main linacs accelerating structures.
- c) Review injector facility to identify major lessons and issues for future study.

3 Work Group Tasks

WG1. Parameters

- a) Create a baseline, common parameter set for the main linacs so that mutually compatible hardware component development can be initiated at both SLAC and KEK.
- b) Conduct a systematic survey of parameter scaling for the purpose a) above. Discuss multi-bunch tolerances in conjunction with the structure length, pulse length and bunch spacing.
- c) Discuss advantages and disadvantages of using C-band to increase the injection energy in the main linacs.
- d) If definitive conclusions cannot be reached during this meeting, summarize the open issues and propose how the near-future efforts towards the goal a) might be organized.

WG2. Injectors

- a) Identify and discuss the issues associated with changing the bunch spacing and train length. State preference from the injector's point of view.
- b) Collect relevant performance and lesson issues (Do not discuss practical and detailed hardware issues, for instance, at ATF. Rather, extract the essence from the specific experiences).
- c) Make a prioritized list of issues from the discussion topics in a) and b), so as to indicate what we expect to accomplish in the subsequent 6 months.

WG3. Main Linacs

- a) Create written plans for joint development of system concepts and hardware components for the main linacs RF power distribution system and the main linacs accelerating structure machining and assembly, for the subsequent 1 year.
- b) Interact with WG1 so as to ensure that the common parameter set is a scientifically and technologically sound one.
- c) Make a prioritized list of other issues, including structure support, requirements for the facility stability, field emission and rf breakdown studies. Indicate there how we expect to start working on these in the subsequent 6 months.

WG4. RF Numerical Modeling

- a) Create a list of tasks and potential technical choices to pursue in the area of numerical modeling of high-power RF systems.
- b) Investigate how joint efforts in a) might be conducted by SLAC and KEK, and make a proposal with possible options.