Progress and Direction for Warm Technology

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Collaboration on Warm Technology

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USLCSEG_UTA
JLC and NLC Collaborations jointly presented to the ILC-TRC a SLED-II Baseline Design for an X-Band collider.

JLC/NLC Level I R&D Requirements (R1)

- “Demonstration of SLED-II pulse compression system at design power.”
- “Test of complete accelerator structure at design gradient with detuning and damping, including study of breakdown and dark current.”
The JLC/NLC Stage 2 design luminosity is $5 \times 10^{33}$ cm$^{-2}$ s$^{-1}$ at 1.3 TeV cms.
The Test Accelerator

The NLCTA with 1.8 m accelerator structures (ca 1997).

Demonstrated ability to reach 500 GeV cms.

Accelerating gradient of 25 MV/m (loaded) with good wakefield control and energy spread.
Test structures exceed the design goal of 65 MV/m (unloaded) for the JLC/NLC TeV collider.

Will start testing full-featured (with damping slots) structures this month.
Structures by Fermilab, KEK, SLAC, and CERN.

SLED-II design complete and half-length system microwave tested.

SLED-II installation will be complete at NLCTA in March with full-power tests starting in April.
Modulator by LLNL-Bechtel-SLAC.
Klystrons and SLED-II by SLAC and KEK.
Asian Committee on Future Accelerators (ACFA) will release a “Roadmap” to an Asian bid to host a linear collider. [February 12, 2003 in Tsukuba, Japan]

- Physics goals and justification (300 GeV?? to greater than 1 TeV??)
- The “XLC” presented by JLC and NLC to the ILC-TRC.
- Cost Estimates.
- Site Requirements and Options.
- Do not know what it will say about international model and/or management.
U.S. Preparations

As part of the preparation of a U.S. bid to host a linear collider the U.S. NLC Collaboration plans to:

- Update the JLC/NLC X-Band Baseline “XLC” and continue R&D.
- Identify candidate U.S. sites.
- Complete “site-conscious” machine layouts and (pre)conceptual designs.
- Update project cost and schedule estimates for a U.S.-sited facility.
- Work with the U.S. LC Steering Committee to create a roadmap of activities needed to complete a conceptual design for a U.S.-hosted machine. This includes evaluation of cold technologies.

Release by Summer 2003 an update of the Snowmass 2001 report that will include technical, cost, schedule, and site information.

Seeking comment from USLCSG on this plan.