

U.S. Workshop on High Gradient Research for a Multi-TeV Linear Colliders

Jonathan Dorfan

Director

Stanford Linear Accelerator Center

Background

- The ILC is the strong US priority for the 1/2-1 TeV linear collider—full support of Office of Science and whole hearted effort at SLAC towards ILC.
- The U.S. High Energy Physics program is also interested in long-range accelerator and technology R&D directed towards the development of a Multi-TeV Linear Collider technology base.
- At CERN: two-beam development for 30 GHz, high gradient multi-TeV linear collider.
- Wealth of experience with high gradient research at SLAC (NLC effort) and throughout the US community—universities and small businesses.

Background

- For the CLIC two-beam approach, CERN sees the next step as a demonstration of performance of the test facility, CTF3, and has requested help from the international community in building this facility.
- The US DOE (Robin Staffin) Response:
 - Jonathan Dorfan and Michael Witherell to work together to organize a U.S. collaboration on multi TeV R&D, drawing participation from the Department of Energy's national laboratories, universities, and those small businesses working in our Small Business Innovative Research program.
 - Ron Ruth asked to be initial Spokesman of the Collaboration.

Charge

- The ILC development will address many linear collider issues relevant for Multi-TeV LCs.
- However, for Multi-TeV Linear Colliders, high gradient acceleration is widely recognized as the key.
- The US collaboration should:
 - Leverage past and ongoing research efforts towards high gradient acceleration and high power generation in order to develop the highest practical acceleration gradient and to establish a working accelerator frequency for a multi-TeV linear collider.
 - Collaborate closely with CERN and our other non US colleagues to leverage two beam accelerator development.

SLAC's Role as Host

- U.S. collaboration will draw participation from
 - DOE national laboratories
 - Universities
 - Small businesses--SBIR program.
- Where possible, SLAC will make its unique resources available to this Collaboration.
- But it is up to the Collaboration to make a strong case for this research program!
- The process begins with this workshop.