Future Plans for the LC WGs

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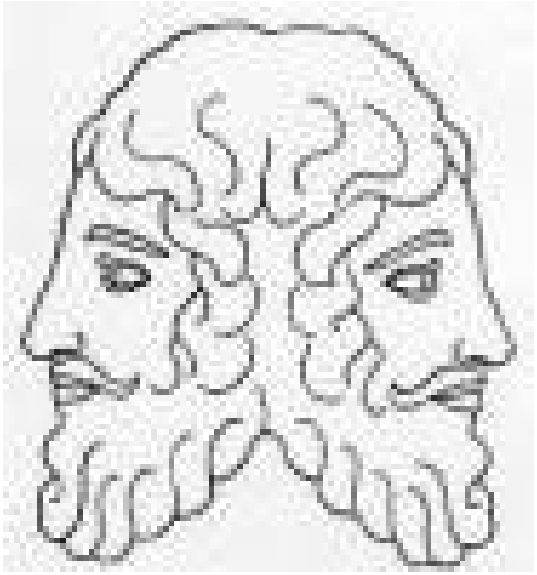
Univ. of Oregon

Santa Cruz Linear Collider Retreat
June 29, 2002

- Where are we now?
- Where are we going?

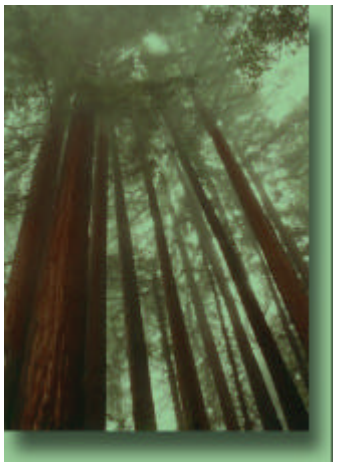


Santa Cruz

- Our principal goals for the Working Groups at Santa Cruz have been

1.) organize an evaluation of key issues relating to the choice of detector and accelerator technology

2.) coordinate the on-going and proposed R&D efforts



Santa Cruz Linear Collider Retreat

June 27th - 29th 2002

- Our meeting has been a great success
  - 132 registrants
    - 7 from Europe
    - 4 from Asia

Physics and Detector Working Groups had very busy program of talks and discussions

We could not have failed with the redwoods, wine and sun

University of California Santa Cruz

Status of the American Physics and Detectors Effort

- We are making excellent progress
  - Working groups have been re-invigorated in last few months to build on the momentum
  - Regional and agency based efforts to develop proposals for funding are moving along
    - Fermilab, Cornell, and SLAC meetings very helpful
  - International interactions are strong
  - Linear Collider Steering Group has been formed and is working to build the support needed to fund our work
- We are limited by funding today, but we can anticipate this situation to improve

Status of the American Physics and Detectors Effort

- In the next few months we expect to
  - Complete the proposal writing and begin new efforts aimed at detector studies with hardware
  - Advance our physics studies of the experimental requirements

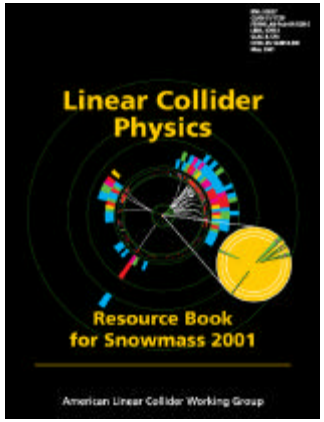
Linear Collider R&D Funding

During the past three years we have received about 1/2 M$ per year for detector simulation and physics studies

(1999-2002) - Prescott Committee

– 1999-00	SLAC/DOE	200k$
–	Fermilab/DOE	100k$
–	NSF	40k$
– 2000-01	SLAC/DOE	300k$
–	Fermilab/DOE	150k$
–	NSF	40k$
– 2001-02	DOE	about 400k$
–	NSF	40k$

~ 1/2 M$/YR



Immediate Goals for the Working Group studies

PHYSICS

What are the value, priority, and importance to the physics program of the LC performance options. We will consider issues such as:

- initial and eventual energy reach
- integrated luminosity
- positron polarization
  - how much is needed/useful
- gamma-gamma collisions
- electron-gamma collisions
- electron-electron collisions

More detailed issues

- energy luminosity spectrum
- beam bunch structure
- other collider parameters

DETECTORS

What are the impact of the accelerator parameters on detector performance?

Investigate

- luminosity
- backgrounds
- beam bunch structure
- calibration (Z peak running)
- other relevant collider parameters

Specify priorities for R&D.

Status of the American Physics and Detectors Effort

- At the same time that we are engaged in this evaluation of machine parameters on physics and detector performance, we must increase the intensity of our R&D program
  - Tomorrow there will be more work on the R&D proposals as the proponents to NSF and DOE will meet to continue the work on the proposal preparation
  - Please attend the appropriate meeting
  - Note - we expect many projects to span the two funding agencies in the cases where groups supported by different agencies are working on the same project.
    - We are working together

Our plan for reports

- Evaluate LC machine parameters and options (mentioned earlier) - high priority - do by fall
- White paper on Physics and Detector R&D
  - Int'l Detector R&D report (blueox.uoregon.edu/~jimbrau/LC/LCrandd.ps)
  - will move to hypertext format
- White paper on the role of the LC during the LHC era (work of the LHC/LC study group)
- Physics and Detector "design manual" - what we know about the options, tradeoffs, performance
  - about summer 2004?
  - should we do this? or what is the alternative?
  - will this be international?

Working Group Leaders Meeting

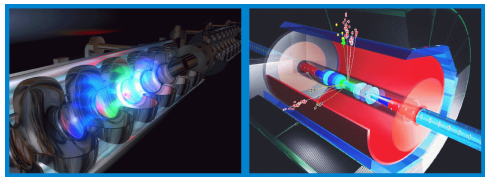
- Last night, during the last phases of the BBQ, the WG leaders met
  - Physics WGs will prepare a brief assessment of the detector requirements in the next month
    - this assessment will include a few key reactions which we can use to track changes in the detector designs
  - Working Groups are working to coordinate and support the R&D proposal preparation
  - The executive committee, working with the WG leaders, will be documenting the impact of the differing accelerator parameters - timeframe: ~ November

ECFA DESY Linear Collider Workshop

ACFA Joint Linear Collider Physics and Detector Working Group

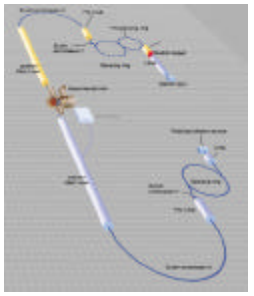
Our effort is world-wide

- Extended Joint ECFA/DESY Study on Physics and Detectors for a Linear Electron-Positron Collider



- Next workshop
  - Nov 15-18, Prague

- ACFA Workshop series



- July 10-12 - 5th ACFA Workshop on Physics/Detector at the Linear Collider, Tokyo

Many of us have been participating overseas
We need to continue and strengthen this
August 26-30, Int'l Workshop on LCs, Jeju Island, Korea

Future Meetings

- **Proposal for ALCPG meetings we will discuss in the LC Steering Group tonight**
  - Next winter (January?)
    - UT Arlington
  - Next spring (June?)
    - Cornell
- **More frequent meetings of working groups between bi-annual ALCPG meetings**
  - this is already happening
- **International**
  - Jeju Island, Korea, LCWS 2002, August 26-30
    - register your intention to talk

Conclusion

- This is an exciting time for those of us interested in the linear collider physics
- The effort we put in now to prepare for the experiments will be the basis for the detectors we will start constructing in a few years.
- Let's all move forward together to optimize our opportunity

And let's thank Bruce and his team at Santa Cruz for all the hard work which has made this meeting so successful