

APS/ANL Involvement in ILC Project

Kwang-Je Kim

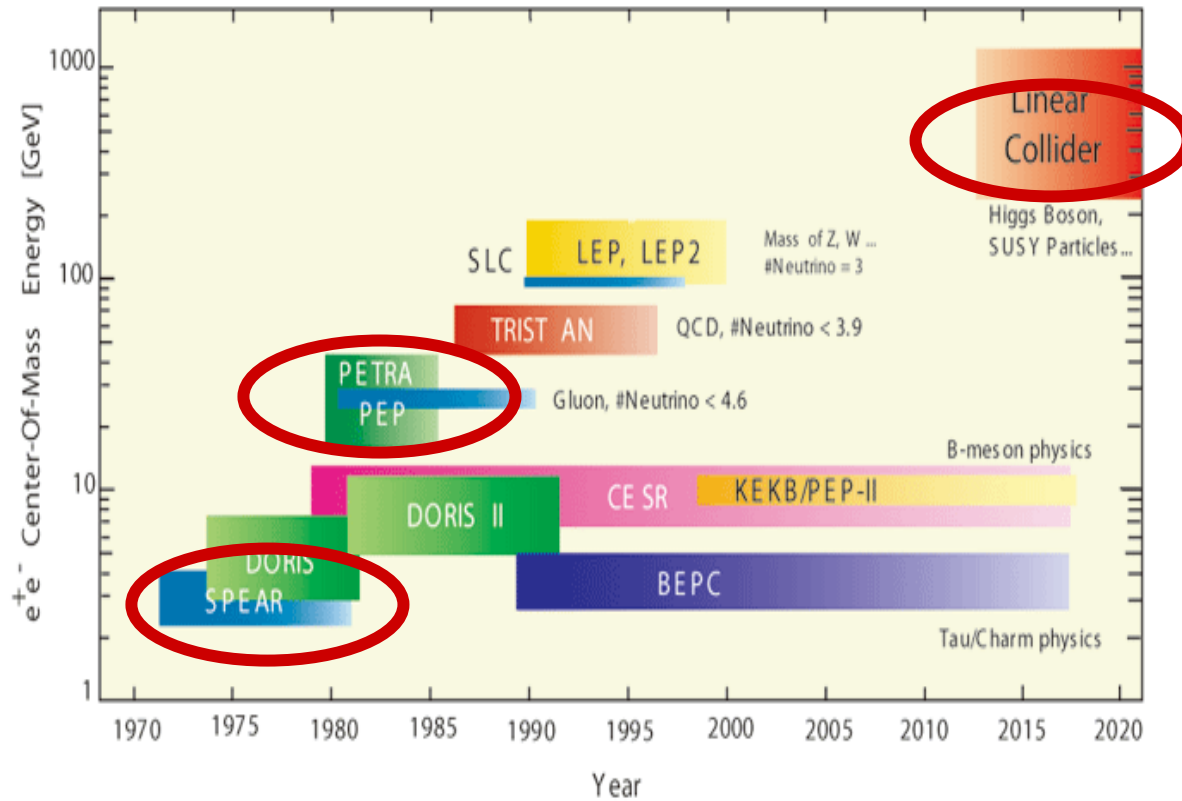
APS/Users Operations Monthly Meeting

January 18, 2006

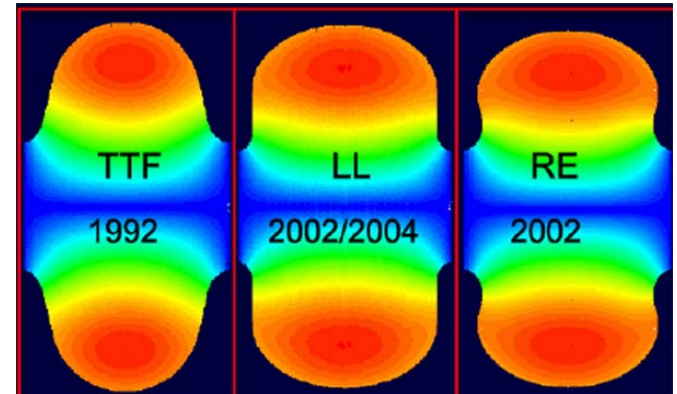


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Electron Positron Colliders The Energy Frontier

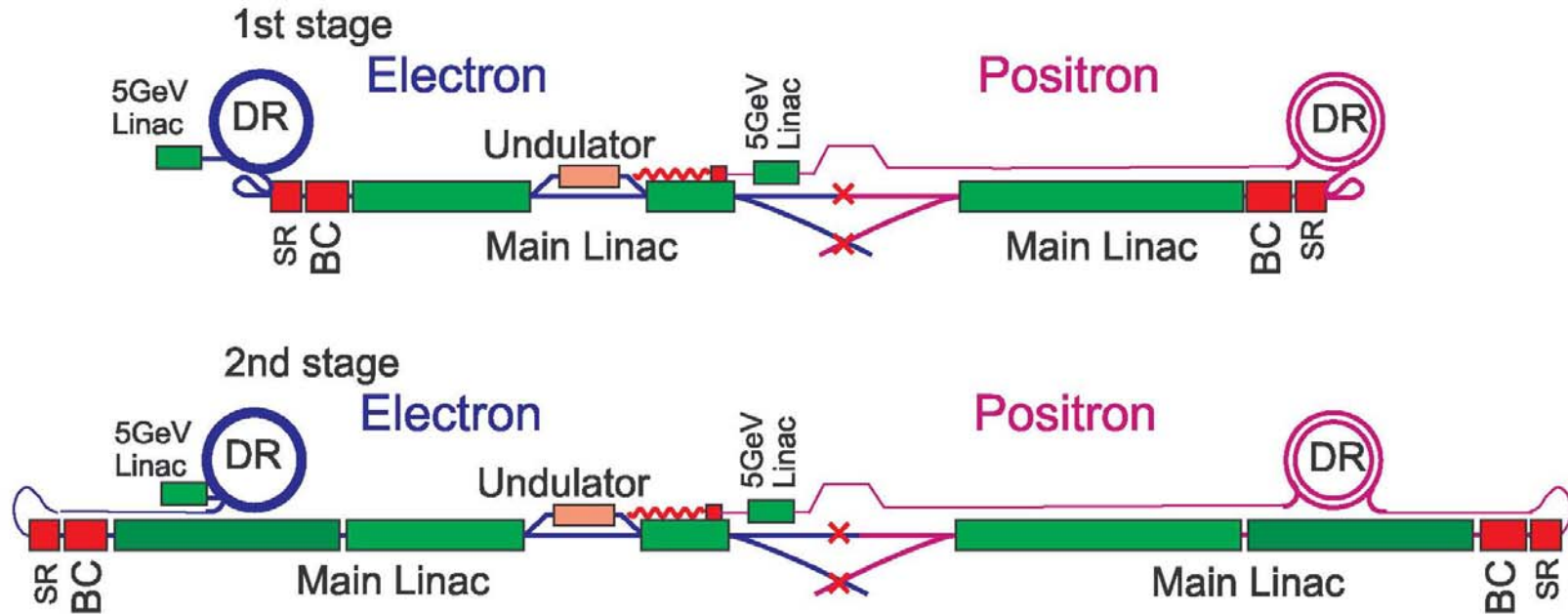


Superconducting RF Cavities



**High Gradient Accelerator
35 MV/meter -- 40 km linear collider**

ILC Layout for 500-1000 GeV CM Collision

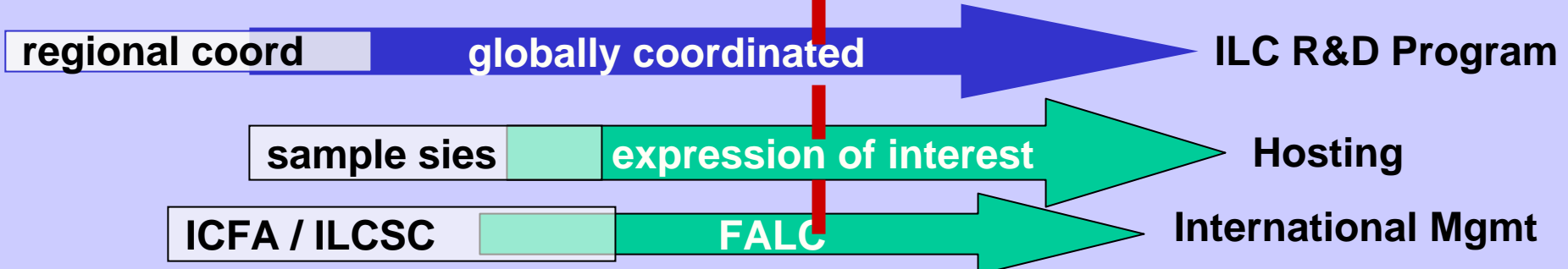
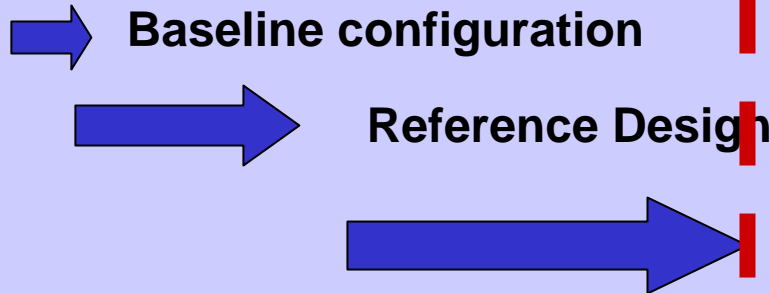


These figures are not intended to define

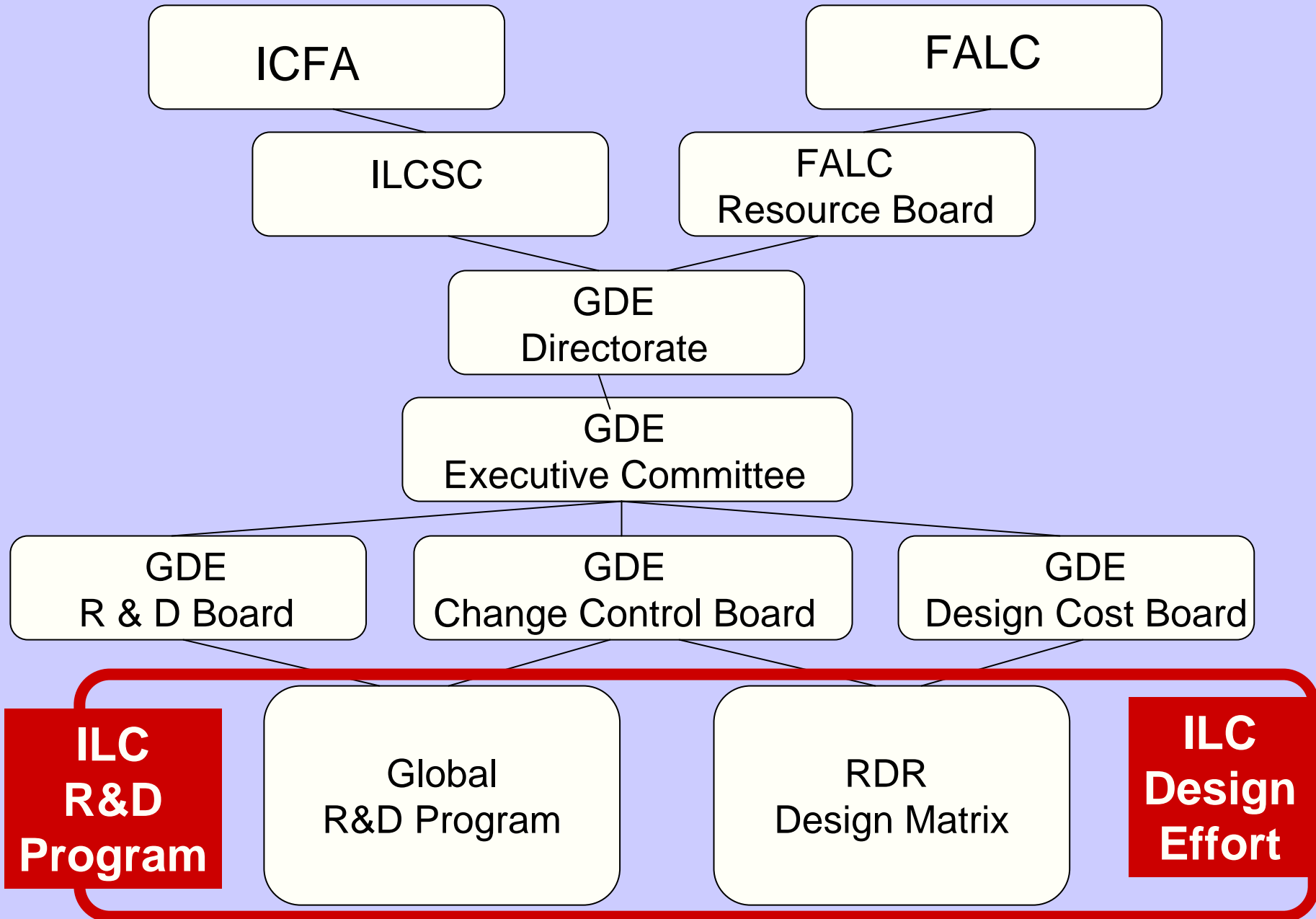
- Location of 5GeV linacs (e^+ and e^-)
- Location of 2nd stage undulator (must move to 150GeV point?)
- Linac orientation (2 linacs may have an angle)

The GDE Plan and Schedule

2005 2006 2007 2008 2009 2010



GDE RDR / R&D Organization



ILC Funding FY06

- Total DOE funding about \$30M
- Main funding to two ILC labs; FNAL and SLAC
- LLNL \$1.2M: e+ target, nano BPM, Marx mod
- JLab \$1M: SCRF cavity processing, large-grain material
- LBL \$500K: DR beam dynamics, ATF experiment
- BNL \$600K: FF magnets
- Cornell \$165K: vertical EP, reentrant shape
- ANL
 - \$300K for DR and positron source
 - Expect some for control & vacuum system RDR
 - Plan for production EP facility, EP at ANL-FNAL Joint facility as a first step (funding under negotiation with Fermilab)

ANL Can Make Contributions to Several Areas of ILC

- Damping Ring... L. Emery, A. Xiao
- Positron Source... W. Gai, W. Liu
- EP for SCRF... M. Kelly, K. Shepard

- Undulator for Gamma Ray Production... APS ID group
- Control System... J. Carwardine
- Vacuum System... J. Noonan
- Alignment... H. Friedsam and B.X. Yang
- Diagnostics... A. Lumpkin?

- Participation to experiments at test facilities
 - KEK/ATF, TTF/DESY, SMTF/FNAL, SLAC DR, or APS?

Concluding Thoughts

- ILC construction in 2010-2015 is not known yet
- However, R&D for ILC will continue/grow in coming years
- APS/ANL has a lot to offer
 - high brightness ring & linac
 - Insertion devices
 - Engineering
- Opportunity for SCRF /ATLAS to branch into elliptical SCRF
- Strong participation to ILC will help to maintain/improve ANL's competitive edge and standing in the world accelerator community