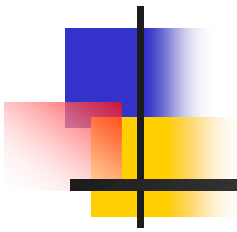


Discussion of Nanobeam Summaries and Areas for Future Collaboration





Workshop Themes!

- Five themes identified during workshop that are ripe for future collaboration
 - BDS and collimation optics
 - Final doublet magnet technologies
 - Component stabilization
 - Instrumentation
 - Low emittance generation
- Future collaboration and new facilities



BDS and Collimation Optics

- Raimondi/Seryi FFS optics:
 - Beam test would be nice! (not necessary)
 - Would form 'nanobeams' test facility
- Tail-folding octupoles
 - Needs beam test; could be simple (low energy) system
- Machine backgrounds and halo collimation simulation tools
 - Extensive new tools being developed
 - Background tuning simulations
 - Interplay of luminosity and background tuning.



Final Doublet Magnets

- Permanent magnets
 - Need to understand variability (tunability)
 - Temperature effects
 - Radiation damage
- Superconducting magnets
 - Compact design
 - 'cold-mass' vibration (stiff design)
 - Of interest to all designs
- Discussions on collaboration started



Stabilization

- Inertial/optical stability tests/studies
 - CLIC inertial tests
 - SLAC based R&D on simple-block and 3m-blocks
 - UBC R&D on optical anchor
- Mechanical linac structures/magnets
 - SLAC NLCTA girder tests starting
 - CLIC stability studies ongoing
 - TTF module vibrations will start
- Fluctuations of magnetic center
 - Field measurements
 - Mechanical measurements and modelling
- IR stability demonstration needed



Instrumentation

- BPMs
 - Absolutely essential for LC performance
 - Evaluation/compensation of drifts (stability)
 - Time-resolution issues with cavity BPMs
 - Environmental effects (backgrounds, SR)
 - Need demonstration of performance
 - LC technology independent
- Laser wire
 - On-going international R&D
- Luminosity-Energy-Polarimetry (LEP)
 - Realistic designs included in lattice(s)
 - R&D mandatory but just starting



Low Emittance Generation

- Damping ring
 - ATF prototype
 - 3rd generation sources: ALS, ESRF, SLS, etc.
 - High-power wiggler issues: needs tests?
 - Dynamic aperture
 - Collective effects (e-cloud, ions etc)
 - ATF collaboration exists; additional collaborations with 3rd generation sources
- Guns
 - *Alternate way to generate low-emittance beams?*
 - Driven by 4th generation light sources
 - Need polarization for LC applications



Proposed Facilities

- IR girder test stand
 - Non-beam IR magnet mechanical stability tests
 - *Is this sufficient?*
- ATF2
 - Proposal to construct compact FFS (plus others)
=> nanobeam test facility at 1.3 GeV
- LINX
 - Colliding nanobeam test facility at 30 GeV
- CTF2-3
 - Multibunch nanobeam test facility
- γ - γ IR demonstration
 - Photon collider experiment



Comments → Linear Collider R&D

- Resources are limited
- Need to focus on essential issues
- Differentiate between feasibility and engineering
 - Both are important but they have different timescales
- Need to collaborate
 - Necessary for sufficient resources
 - Important to guarantee success
 - We are all in this together!
 - Success benefits everybody – failure hurts everybody
- Five groups to generate logical proposals