Session 3 (Stabilization). What is achieved and where to proceed

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FD Stability

- In CLIC test, the achieved stability is close to what is required for LC FD !!!
- Need for high magnetic field – proof system
  => non-magnetic sensor R&D at SLAC is on the way
- Achieved required resolution of optical sensing (UBC), successfully used in stabilization tests
- Need for overall IR integration
  => SLAC IR girder mock up on the way

Stabilization of CLIC linac quads

- Required level of stabilization of high frequency vibration is achieved (CERN)
  => Need to study if slow stability can be preserved
  => Need to study implication for overall design and operationability

Stability of linac quads

- Feasibility of NLC stable linac quads is demonstrated. Decoupling from vibrating RF structure is sufficient
  => need to test with RF pulse
  => need to optimize the final design

- Stability of TESLA linac quads
  => need to be investigated

Site characterization

- Detailed program at FNAL and SLAC
  => continue
- A remote (100m?) pump in a deep (250ft?) well can affect motion of a shallow tunnel on 10 micron level, far exceeding expected from ATL motion !
  => study further and understand implication on designs placed in unfavorable geology

CLIC Stabilization lab

- Can be used for various tests
  - Stabilization of SC quad?
  - Stability of SC quad magnetic center?
  - Tests of feedforward correction of linac quad magnetic center?
  - …

Invaluable experience of e- and hadron rings

- ESRF, SLS, Tevatron, RHIC
- Advanced orbit control
- Possibility of common interest stability study
- RHIC – large horiz. motion of quads in SC triplet. Pressure fluctuations in Helium?

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