Joint CLIC/ILC Beam Dynamics Working Group

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Stats

- Very high quality talks
- 15 talks (6 of which shared with BDS-WG; 6 given remotely)
- Small attendance: from 3 to max 10 people
- Main topics:
  - CLIC / ILC / ATF2 FFS tuning and optimization
  - ILC TDR design
  - Ongoing experimental program
  - Other topics

CLIC / ILC / ATF2 FFS tuning

- The amount of work witnesses the complexity of the problem
- Tangible widespread global effort to deeply understand the FFS and to study its tunability and performance
  - H. Garcia: CLIC – Different designs are being considered (local chromaticity correction scheme, vs traditional ffs) at different energies : 500 GeV and 3 TeV, the tuning is hard
  - O. Blanco, H. Garcia: Advanced optimizations of the optics: (1) CLIC – to minimize Oide effect, (2) ILC / CLIC – to get the maximum from the traveling focus +30% L for ILC 500
  - L. Malysheva: ILC, Optimization of the low energy option
  - Y. Renier: Feed forward with GM sensors at ATF2
  - T. Okugi: Linear and Nonlinear knobs at ATF2

ILC TDR Design

- <u>A. Vivoli</u>: Status of the RTML lattices

- <u>N. Solyak</u>: Status of the ML, design
  - KCS - Klystron Cluster Scheme ("4-RFU" and "3-RFU")
  - DKS - Distributed Klystron Scheme ("3-RFU")

- <u>S. Seletskiy</u>: Optimization of the BCs and EXT lines
  (optimized BCs, new design for EXT lines : using sextupoles might induce cost saving)
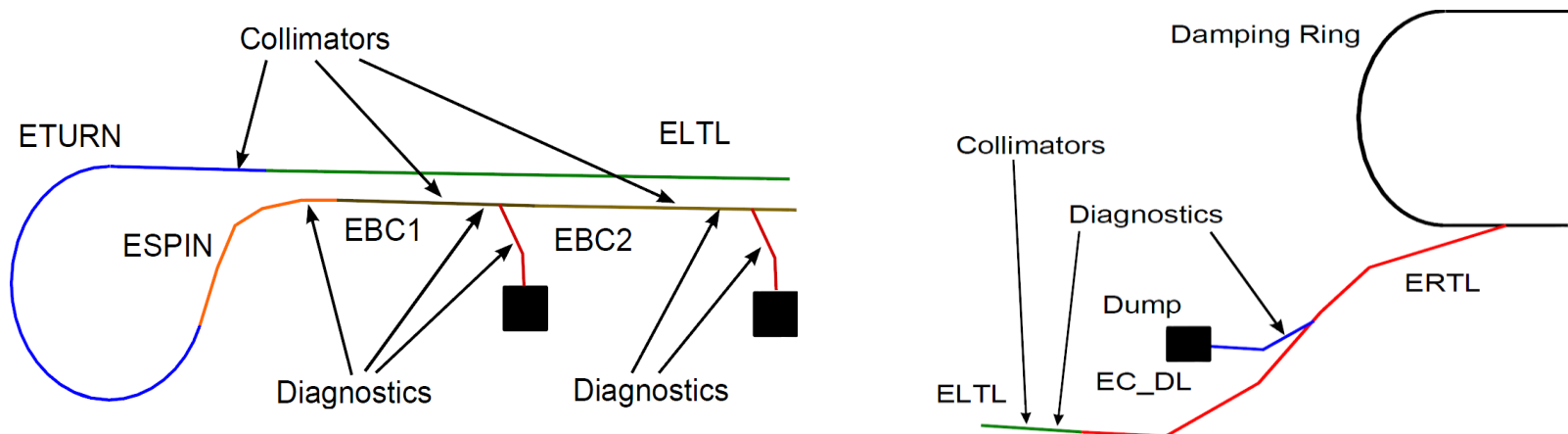
Ongoing Experimental Program

- <u>G. De Michele</u>: Measurement of Wakefields in the Accelerating Cavities of CLIC at SLAC-FACET

- <u>J. Resta-Lopez</u>: Measurement of Collimator Wakefields with Smith-Purcell bunch length monitors at SLAC-ESTB improvement over previous experiments

- <u>A. Latina</u>: Tests of System Identification and Beam-Based Alignment at SLAC-FACET; promising results already obtained – waiting for more beam time

- <u>E. Adli</u>: reviewed the results of TBL tests at CTF3 (PETS: Power Extraction and Transfer Structures)

Other topics

- Y. Levinsen: Solenoid tracking in PLACET

- J. Pfingstner: Online Dispersion-Free Steering in the CLIC main linac, a version DFS able to run parasitically during the operation

- J. Esberg: Studies of drive beam stability in CLIC

Conclusions

- Community is shrinking, yet great quality work is produced

- FFS tuning is still a tough problem: it's being attacked on many fronts
  - semi analytical / numerical optimizations
  - synergy is important

- ILC TDR lattices are reaching full maturity

- Codes are providing more and more sophisticated simulation capabilities

- Relevant experimental programs are on-going