Damping Ring Summary

S. Guiducci (LNF)

AS TAGL meeting

May 6, 2009

E-cloud

- SLAC
  - **E-Cloud sections 1, 2, & 3 relocate to Cesr-TA**
  - **grooved chamber for Cesr-TA dipole**
  - **investigate TiN long term durability**
  - **continue simulation efforts**
- LBNL
  - **simulations, code development (WARP-POSINST)**
  - **TE Wave measurements in Cesr-TA**
  - **wiggler vacuum chamber (grooved chamber, clearing electrodes) under fabrication**
- LNF
  - **simulations of coupled-bunch using PEI-M in qualitative agreement with grow-damp measurements on DAFNE.**
  - **a second horizontal feedback to contrast the instability: half the damping time of a single feedback (4.3 μs -> 13 turns)**
- KEK
  - **measurements of electron density and tests of mitigation techniques in magnetic fields**
  - **clearing electrode reduces by two order of magnitude the e-cloud density in the wiggler**
  - **clearing electrode with improved feed-through (to avoid discharge) under test now at KEKB**

Fast kickers

- LNF
  - **Tests of high voltage (24 KV), FID pulsers on the DAFNE injection kickers to improve reliability under continuous operation**
- KEK - ATF
  - **beam extraction test failed due to broken pulsers (high radiation level near the extraction area)**
  - **after repair, the pulsers have been installed behind a concrete shielding block**
- SLAC
  - **transmission line adder to combine the output of an array of ~1 kV ultra-fast hybrid MOSFET/driver switching modules.**
  - **the adder can combine pulses with 1.4 ns switching time without any degradation**
  - **DSRD program - provide a Kicker modulator for ATF2: promising results on a prototype with 2 ns flat top, design of a 4 ns prototype is in progress**

BD and Technical issues

- LET - ATF
  - **vertical emittance is again below 10 pm!**
    - 10pm by X-SR monitor
    - 5 pm by laser wire
  - **The resolution of the measurement systems needs further check but it is a good progress in the direction of achieving the 2 pm goal**
- Vacuum design and wake field modelling at CI
  - **Arc design and CAD drawing nearly completed**
- Lattice design at CI: modified injection and extraction lines
- Minimum Machine
  - **LNF - lattice and dynamic aperture optimization for ~3 km lattice**
    - SuperB type arc cells
    - same straight sections as RDR 6.4 km lattice.