

Longitudinal Density Monitor

Proposal for FY05: Study different optical technologies to measure the longitudinal profile of a bunch - in collaboration with LBL.

Original idea of using a laser and upshifting the mixed light (from beam and laser) deemed to be unreliable.

Pros	Cons
Cutting edge technology, advances R&D within LARP	Not supported by CERN yet
Could be useful in the Tevatron	Untested, no confidence that any of the proposed methods will work

Strategy

- Collaborate with LBL on developing an **abort gap monitor**
 - Will be tested later this year in the Tevatron - before the shutdown
 - Proposed expense in FY05 - \$ 50K for M& S and travel, no labor
- Work on a longitudinal density monitor can wait for later, depending on mutual interest (CERN, FNAL)

Schottky Monitor

Proposal for FY05

- Optimize the design details
- Use it for reliable bunch by bunch tunes and chromaticity
- Study if tune and chromaticity feedback are possible

Pros	Cons
Considerable expertise at FNAL	CERN is building the monitor
	Is CERN interested in the support (AP, software) ?
More advanced applications (e.g. tune feedback) would be useful in the Tevatron	Is there money ?

Strategy

- Explore CERN's interest
- Define LHC requirements and performance enhancements
- Parasitically test in the Tevatron

Tune tracker

Proposal for FY05: Build a tune tracker based on a phase locked loop for tune feedback during the ramp.

Pros	Cons
Supported by CERN	BNL is more advanced in their design
Would be useful in the Tevatron	

Strategy

- Continue development for the Tevatron
- Phase out collaboration with BNL on this device