Existing Instruments

**LARP**

As the LHC beam commissioning starts we plan to provide local and remote assistance to all instruments:

- Schottky*
- Tune Feedback (and Chromaticity studies)*
- Lumi
- AC Dipole

Contribute to hardware and beam commissioning through dedicated trips to CERN as well as data analysis in the US

Contribute to the growth of the LHC and the detector’s performance

Funding Travel and limited effort through full LHC performance

Continued fractional Post Doc funding for AC dipole

*Not presented at CM12, but alive and well
Other Instrumentation Activities

**LARP**

Synch light monitor studies

  Continue expanding the system and help CERN instrument 2nd ring
  Actively participate in measurements and beam studies

Fund 0.5 FTE and $20k/yr travel until FY11

Other collaborative effort can be defined after LHC startup, when the performance of existing systems will be known

Additional injection chain improvements and machines are aging and new ones are replacing them
Injectors Upgrades

Linac4 and H⁻ diagnostics

- Demonstrate feasibility of H⁻ emittance measurement system at existing facility
- Move to a construction project if method is proven
- Close collaboration between CERN (and other European Labs) and US labs (coordinated by LBNL)

From FY10 to FY12, 0.75 FTE/yr, $75k materials, $30k/yr travel

IPMs

- through studies dedicated for PS2
- See Uli’s plans
LLRF Modeling and Development

LARP

Continue implementing existing models to the LHC and develop dedicated algorithms

Modeling support needs to parallel the growth of LHC performance

Plan involvement well into operations to support performance optimization

Continue to ~FY12 at flat level of funding – 1.5 FTE/yr (including one PD) + $40k/yr travel
Unlike other LARP tasks, no task takes 10 years in instrumentation and LLRF Technology and methods improve and we plan to continue contributing to LHC performance improvements on a task to task basis ie. Activities in the US for next generation digital BPM processing systems CERN interest in rad hard diagnostics Technology obsolescence

Significant contributions made also through LARP labs resources this may or may not continue