

US LHC Accelerator Research Program
Task Sheet

Task Name: Measurement of fast-pulsed magnets (WBS ???)

Date: 5/29/06

Task leader: P. Wanderer (BNL)

Participating laboratories: BNL

Time period: FY07

Budget request:

| | LARP | Core Program | Total |
|-------|------------|--------------|-------|
| | FY07 (k\$) | FY07 (k\$) | (k\$) |
| BNL | 130 | | 130 |
| FNAL | 0 | | 0 |
| LBNL | 0 | | 0 |
| Total | 0 | | 0 |

Statement of work:

CERN (Luca Bottura) has requested the help of BNL (Animesh Jain) to build a measurement system that will precisely measure fast-changing magnetic fields. This is a major issue for LHC at injection. Fast-pulsed magnets in the LHC injection chain are also a possible upgrade path for the LHC. Over the period of the last several years, BNL has built and debugged a system for making such measurements on the fast-pulsed model dipole that we built for GSI. At present, it is estimated that a stay of several months (0.4 FTE), spread over a period of time, would be needed to build and commission such a system at CERN. Travel expenses would be paid by CERN.

FY2007 Milestones:

- Q1 – Develop hardware, software specifications for CERN system
- Q3 – Complete system for measuring fast-pulsed magnets
- Q4 – Complete initial test of system

FY2008 plan: Measurement of a small number of LHC dipoles.