

2004 MD request

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Machine: SPS
General_subject: LHC test-bed
ParallelMD_sessions_number: 3-4
ParallelMD_hours_per_session: 8
WednesdayMD_sessions_number: 1-2
WednesdayMD_hours_per_session: 8
LongMD_sessions_number: 0
LongMD_hours_per_session: 0
Remote Name: 137.138.48.141
Remote User:
Date: 13/01/04
Time: 14:57:51

Subject:

Test of Long-Range Beam-Beam Compensation.

motivations:

This experiment uses current-carrying wires to simulate the effect of long-range collisions in the LHC and its compensation. While in 2002 and 2003 only one compensator prototype was available, in 2004 there will be 3 (each consisting of 2 wires), at different locations, one of which will be movable. This will allow, for the first time, a demonstration of the compensation and an assessment of pertinent tolerances. Also upgraded scraper software should facilitate the direct measurement of diffusion coefficients. MD plan: The new devices and new software will need to be commissioned (1 MD); tune sensitivity observed in last MD 2003 should be verified (1 MD); compensation of BBLR in point 5, explore tolerances on transverse position and excitation current, comparison of H-H and H-V crossing.

Participant_names:

Jean-Pierre Koutchouk,
Jorg Wenninger

Beam:

26 GeV/c, 12 bunches of LHC type beam with reduced intensity of about 4-5e10 protons per bunch (parallel MD); if available, 55 GeV/c, other parameters the same (Wednesday MD).

Preferred_periods:

Before the end of August

requirements:

Scraper, Wire Scanners, BCT, Tune Meter, 1000-Turn BPM Acquisition,
Orbit Measurement and Correction, PMT Readings, BBLR Excitation.

Publications:

J.-P. Koutchouk, J. Wenninger, F. Zimmermann,
Compensating Parasitic Collisions Using Electromagnetic
Lenses, Proc. e+e- Factories'03, Stanford, Oct. 13-16 2003,
see <http://www-conf.slac.stanford.edu/icfa03/wkgroups.htm>;
with F. Ruggiero for approval as CERN publication.

Comments: