

Beam Commissioning / Acc Physics Plan

Beam Commissioning

Original intention is to put **one US Accelerator Physicist on every commissioning shift**. How to organize this?

Activities in Beam and Instrumentation Commissioning will mainly be **organized through the AB-LHC operations** team.

The LARP commitment to BC must be made real with long term **individual commitments of up to 12 months**.

There is a **need for potential participants to visit CERN for short periods – 1 to 6 weeks**.

There is **no beam after 2004** until the sector test in 2006 (2007?)

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WHAT	WHEN	CERN LIAISON
	2004	
TI8		
Materials testing	Sept 04	R. Schmidt, V. Kain
Optics matching	Sept 04	J. Uythoven
SPS		
Phase Lock Loop	June/Sept 04	R. Jones
Collimators (& TI8)	Sept 04	R. Assmann, R. Schmidt
Ecloud & vacuum diagnostics & studies	Sept 04	M. Jimenez, F. Zimmermann
Impedance & high current tests	?? Sept 04 ??	F. Ruggiero, E. Shapashnikova
Long range beam-beam wire compensators	Summer 04	J.P. Koutchouk
	2005	
	2006	
Sector test with beam	May 06	M. Lamont
	2007	

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Collimators in SPS & TI8

1 prototype collimator will be installed in the SPS, & 1 in TT40.
Eg: will the TT40 collimator jaw survive being struck with 4 batches of 72 bunches of 1.1×10^{11} protons at 450 GeV, delivering 2.4 MJ?

(LARP could/should take on the task of performing operational modeling and simulation of much more realistic LHC situations, in particular for the 350 MJ/collimation problem.)

Materials testing in TI8

450 GeV beam testing in a "materials test zone" in TI8. Semi-independent from the collimator tests. Eg: predict when a carbon-carbon block should suffer damage.

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Optics Matching in TI8

Probable involvement by a physicist from Jlab

Phase Lock Loop

Beam tests in the SPS

Ecloud and vacuum diagnostics and studies in the SPS

Four set ups will be used in a warm straight section

- an additional cold strip detector, including a quad strip detector
- COLDEX : LHC realistic circular beam screen
- Retarding Field Detector
- NEG test bench