

MPS test with beam & PM

- PM system now linked to SIS.
 - Injection blocked after PM until acknowledged by EIC/expert.
 - PM blocks after ~ 20 seconds now (was ~5 minutes so far).
- EIC/expert must acknowledge PM and enter a (very precious) comment.
 - Stored with event DB
- Most used data: BLM, BPM and BIC.
 - In inject-dump mode, BIC PM analysis sometimes mixes events...
 - BLM data has 40 us and 1.3 s RS: if dump triggered by another RS, there can be some confusion, but information is present. **It seems however that there is no sign of signal above threshold in the logging – investigating.**
 - Other systems provide data that could be analyzed:
 - BBQ → tune.
 - BCTs.
 - ...

MPS tests 10.03.2010

□ 450 GeV, pilot.

Event stamp	Trigger	Conditions and results
10.03.2010 12:26:07	FMCM	RD1.LR1 OFF. Test successful - clean dump by FMCM - no orbit movement, no loss.
10.03.2010 12:52:44	FMCM	RD34.LR7 off. Test successful - clean dump by FMCM - no orbit movement, no loss.
10.03.2010 13:09:33	BLM	RD1.LR5 off with FMCM masked. Test successful - FMCM would have triggered 600 turns before BLM dump. There are small losses at Q5.R1, which could be consistent with the observation of some signal by ATLAS.
10.03.2010 13:40:24	FMCM	RQ4.LR3 off. Test successful - very clean dump. No beam loss.
10.03.2010 13:52:57	Beam excursion	RQ4.LR3 off, but with FMCM masked. It seems that with so little beam, the BLMs never got over threshold, and we lost the beam over 2 seconds until the beam offset got large enough to trigger the BPM interlocks.
10.03.2010 14:24:29	SIS Orbit + CODs	Large orbit excursion in one ARC. Test successful SIS dump on orbit excursion B2 H plane and on COD settings in B2 H plane.
10.03.2010 14:51:58	Beam excursion	Q trim towards the integer. We cannot go down sufficiently to trigger a fault. Some loss going down by -0.2, significant (and expected) orbit change. Dumped by beam excursion in IR6.
10.03.2010 15:19:31	Beam excursion	COD field integral on beam1. Beam1 was dumped on beam excursion with an energy offset of 1.6 permill by the beam excursion monitor in IR6.
10.03.2010 15:34:58	SIS COD integral	Repeat previous, with bpm interlock masked and trimming in one go to > 2 permill energy offset. Test successful - SIS dump on COD integral sum. The PM data has no turn data for beam1.

>> Excellent results !

MPS End-of-Fill tests

- To take advantage of low intensity end of fills at 3.5 TeV and use them for MPS tests, prepared a test list for the EIC on the MPS test pages.
 - EIC should pick the first in the list (includes instructions) and execute the test.

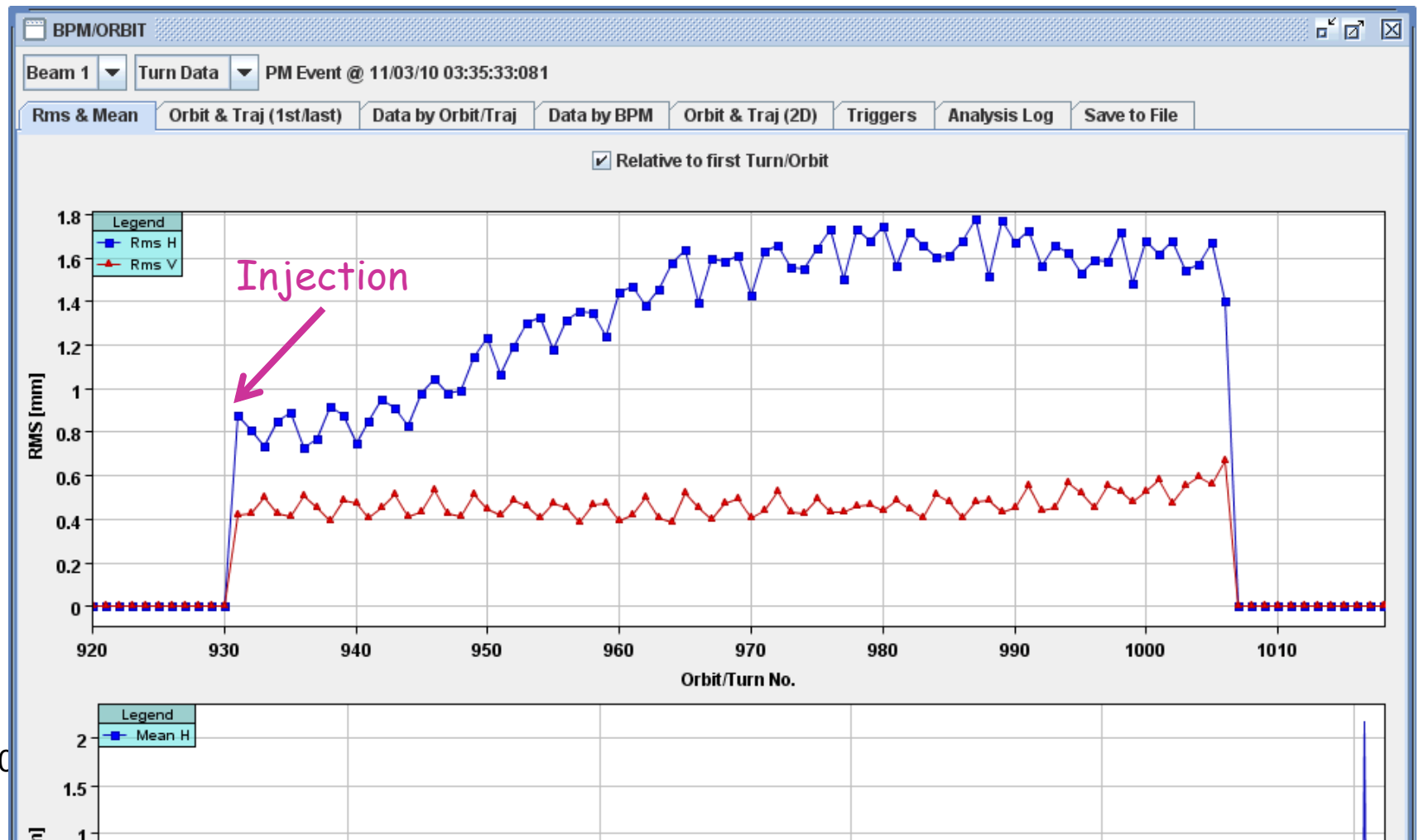
The screenshot shows the Machine Protection web site interface. The main content area displays the 'MPS Task List 2010' with a table of tasks. A red arrow points to the 'Phase : MPS EoF Tests (2)' section, which contains two tasks:

Test Name	Start Date	End Date	Contact Person	Results	Locations Tested	Repetition	Status
RD34.LR3 FMCM beam test @ 3.5 TeV !NEW	01/03/2010	01/10/2010	Jorg Wenninger	S23; S34		N - Never	Not yet scheduled
RD1.LR1 FMCM beam test @ 3.5 TeV !NEW	01/03/2010	01/10/2010	Jorg Wenninger	S12; S81		N - Never	Not yet scheduled

Another interesting event - ADT

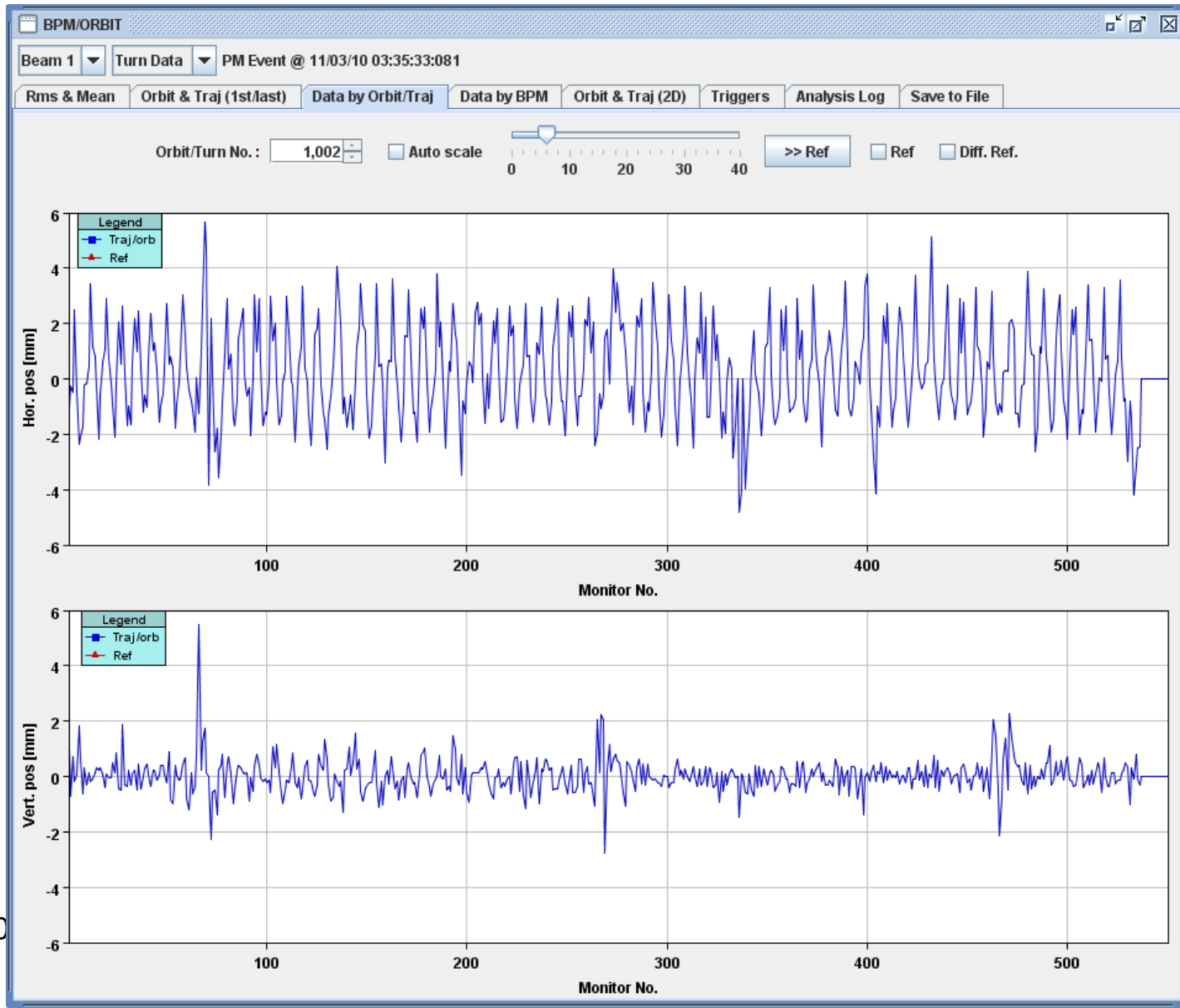
- Damper phase wrong – excites the beam1 until BLM trigger.

Evolution of trajectory rms versus turn.



Another interesting event - ADT

Last turn before dump.



08/02/20

Another interesting event - ADT

Beam dump trigger from BLM at TCLA of B2 (X-talk from TCP of B1).

