

Weekly MD Report – 20 to 24 October 2014 – Gian Piero Di Giovanni

On Monday, Bettina Mikulec and myself met with several BI experts to figure out all the issues about the BPMs in the extraction line. We finally understood what was wrong with BTP.BPM10 horizontally. The fault was found in the gain. The default gain (gain_2) does not work well and by switching to another (gain_1) we got the expected BPM response, see Figure 1. The amplifier will be looked at, during the upcoming technical stop of the 29th October 2014.

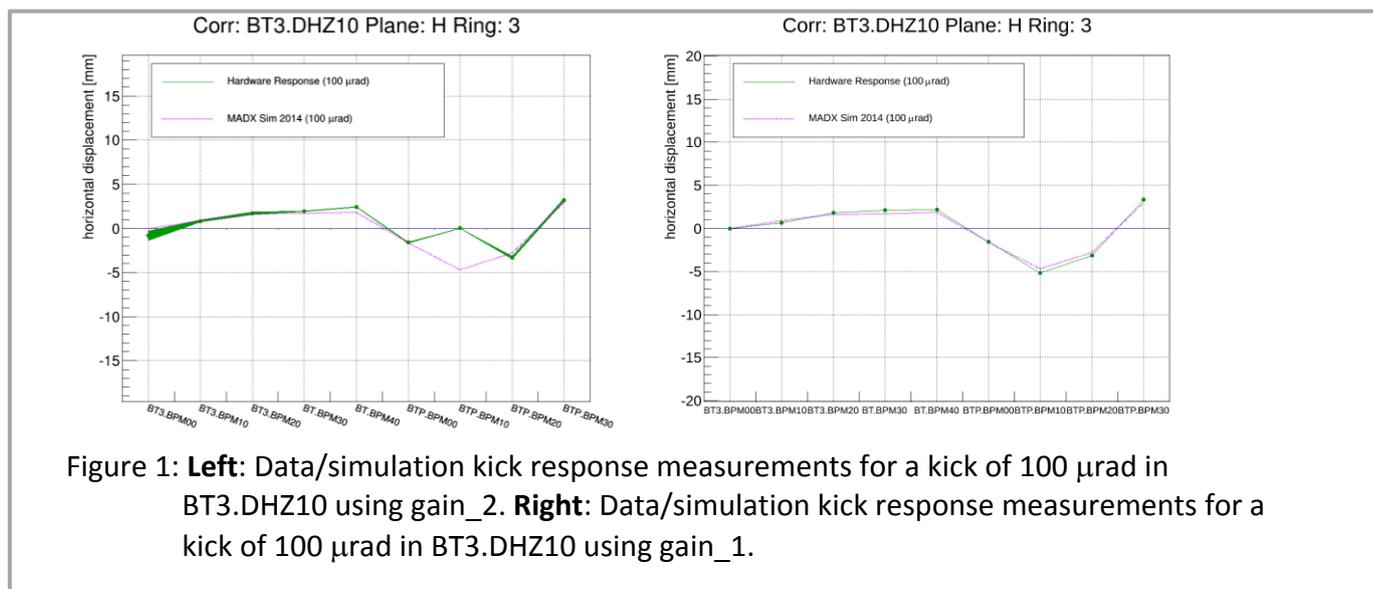


Figure 1: **Left:** Data/simulation kick response measurements for a kick of 100 μrad in BT3.DHZ10 using gain_2. **Right:** Data/simulation kick response measurements for a kick of 100 μrad in BT3.DHZ10 using gain_1.

On Wednesday together with Bryan Jones, Bettina Mikulec, Jean-Baptiste Lallement and Han Broere, we looked into the Linac2 debuncher cavity LT.CDB10. During last week-end the value was changed from 285.6 degrees to 255.6 degrees for the users NORMGPS and TOF resulting in an increase of injection efficiency, see <https://ab-dep-op-elogbook.web.cern.ch/ab-dep-op-elogbook/elogbook/secure/eLogbook.php?shiftId=1058216>.

On the other hand, with this new phase setting of LT.CDB10, we ended up actually adding energy from the debuncher to the beam, which we should not (and resulted in pumping a lot of RF power, 35-40 kW). Finally we had to go back to the original settings of 285.6 (~285 deg). These were copied to all the cycles. As a side note, it was recommended to have the same debuncher settings for all the users because switching between phases every few seconds would severely shorten the hardware lifetime.

Unfortunately, this decreases the injection/capture efficiency for certain cycles. Nevertheless, this could be seen an indirect indication that with some more work on PSB side, the injection efficiency can be improved.

Some additional information is available at the Linac2 elog, <https://ab-dep-op-elogbook.web.cern.ch/ab-dep-op-elogbook/elogbook/secure/eLogbook.php?lgbk=21&date=20141022&shift=2>.

