

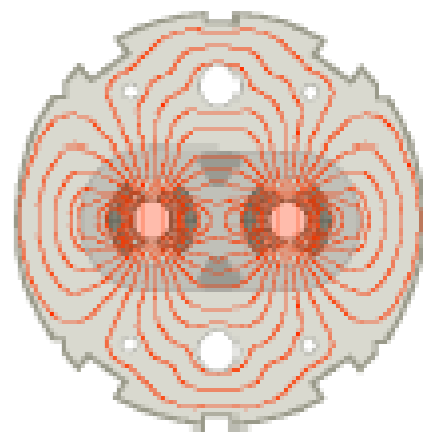
*LHC Sector Test Meeting*

*August 12<sup>th</sup>, 2008*

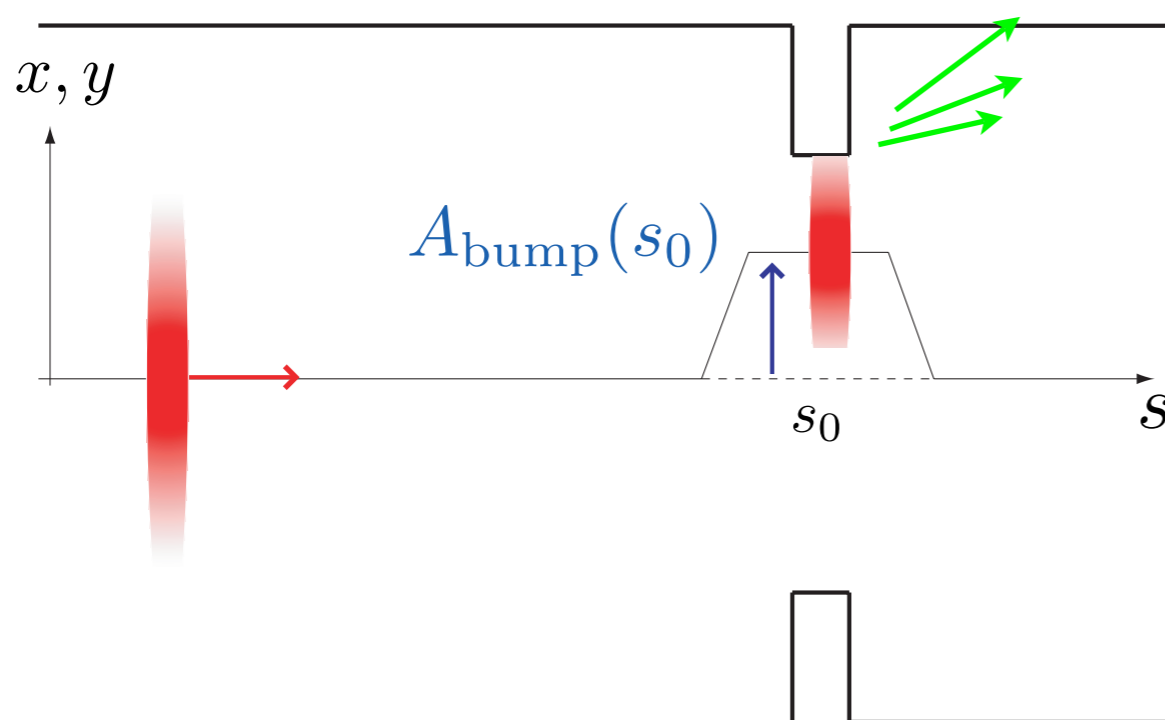
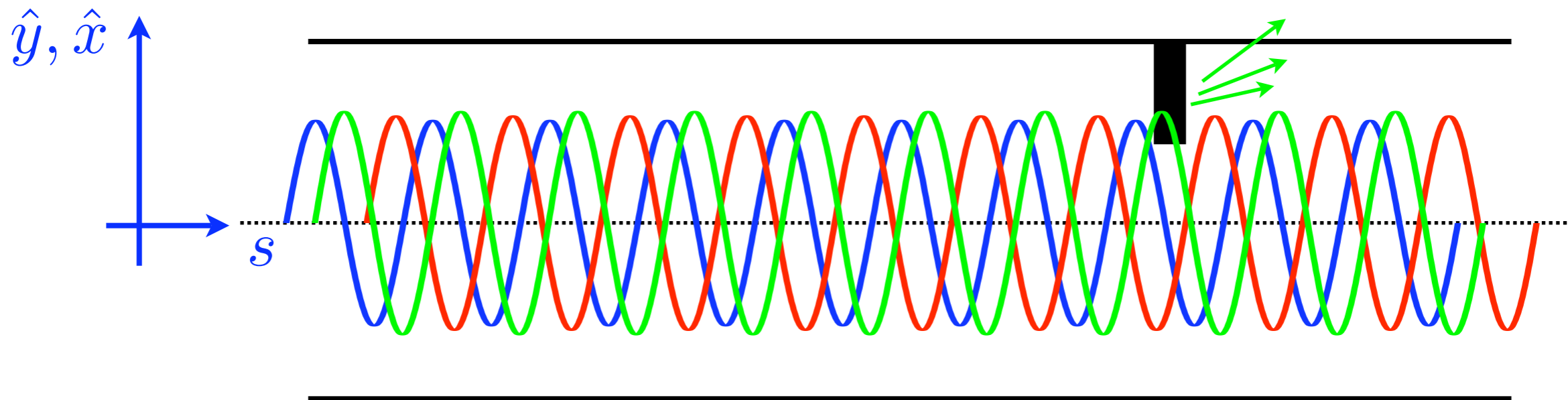
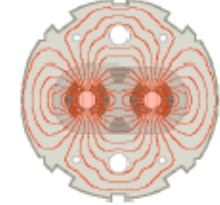
# **Ring Aperture Measurements during the Sector Test**

**I. Agapov, R. Calaga, M. Giovannozzi,  
S. Redaelli, F. Roncarolo, R. Tomàs *et many al.***

*Acknowledgments: Joerg, Gianluigi, Injection team, shift crew.*

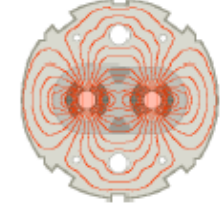


# Methods for aperture measurements



*Global aperture measurements with free oscillations + local bumps. measurements relied only on BLM measurements.*

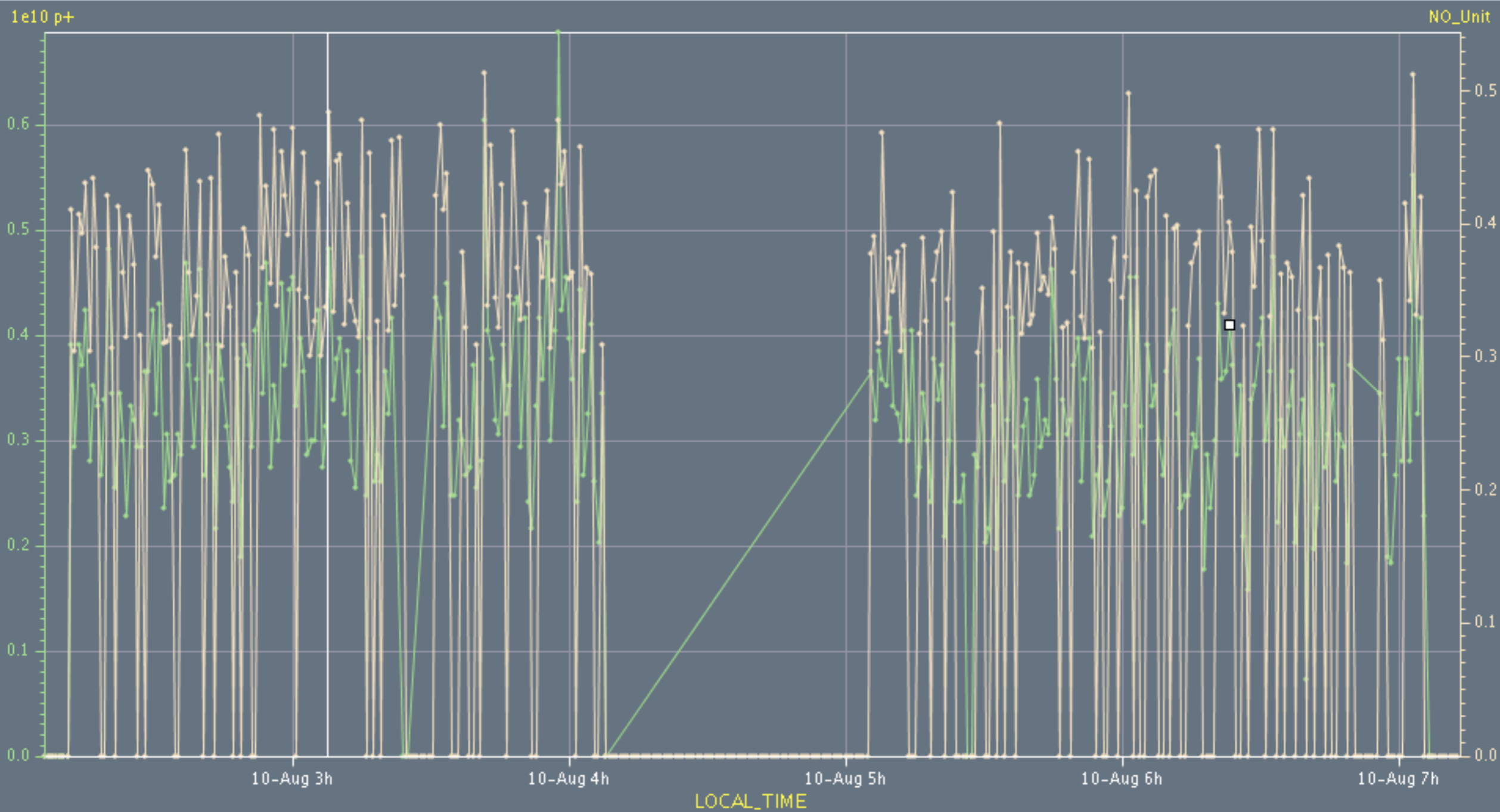
# Beam availability (09-08-2008)



Timeseries Chart between 2008-08-09 20:46:00 and 2008-08-10 07:46:00 (LOCAL\_TIME)

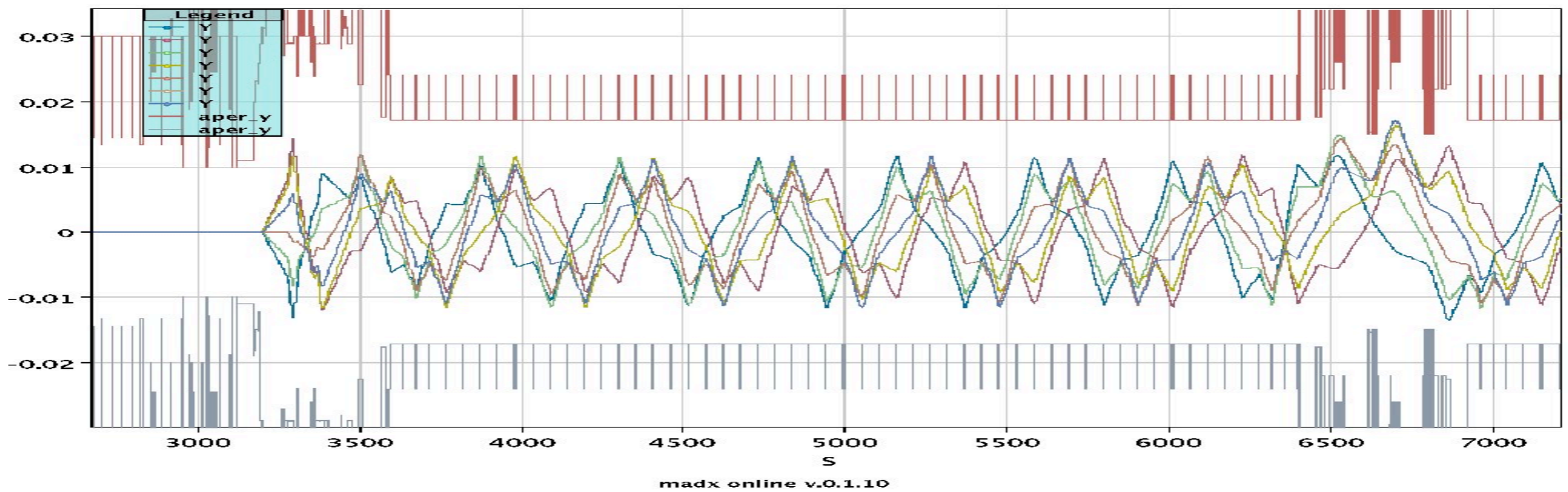
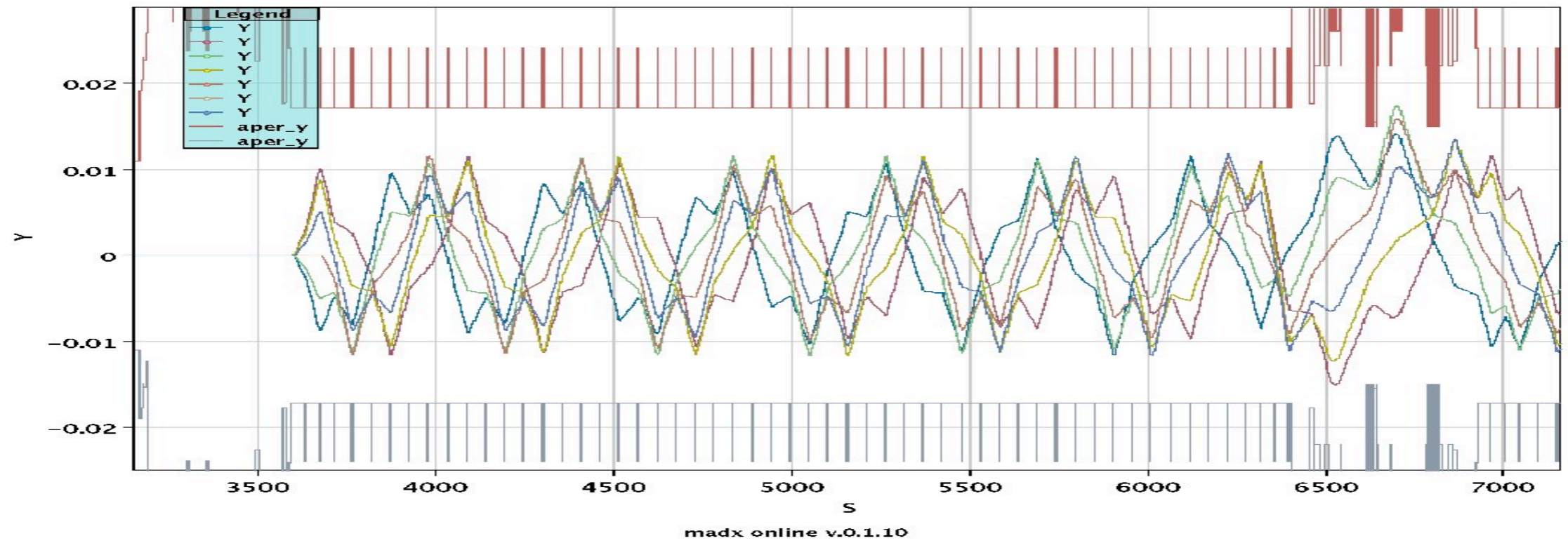
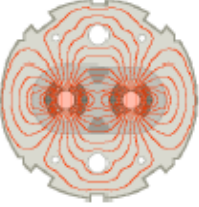
LHC.BPMINT.SR3.B1LA:INTENSITY

T12.BCTFI.29125:INT\_HBW\_EXTR1

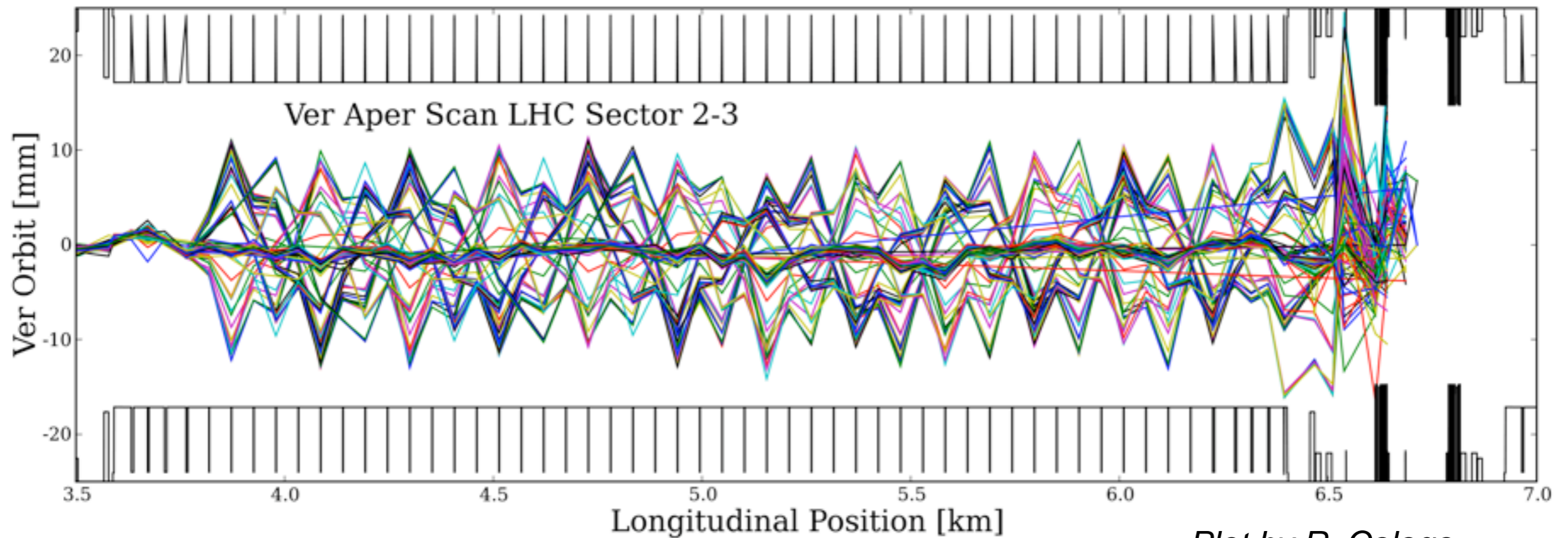
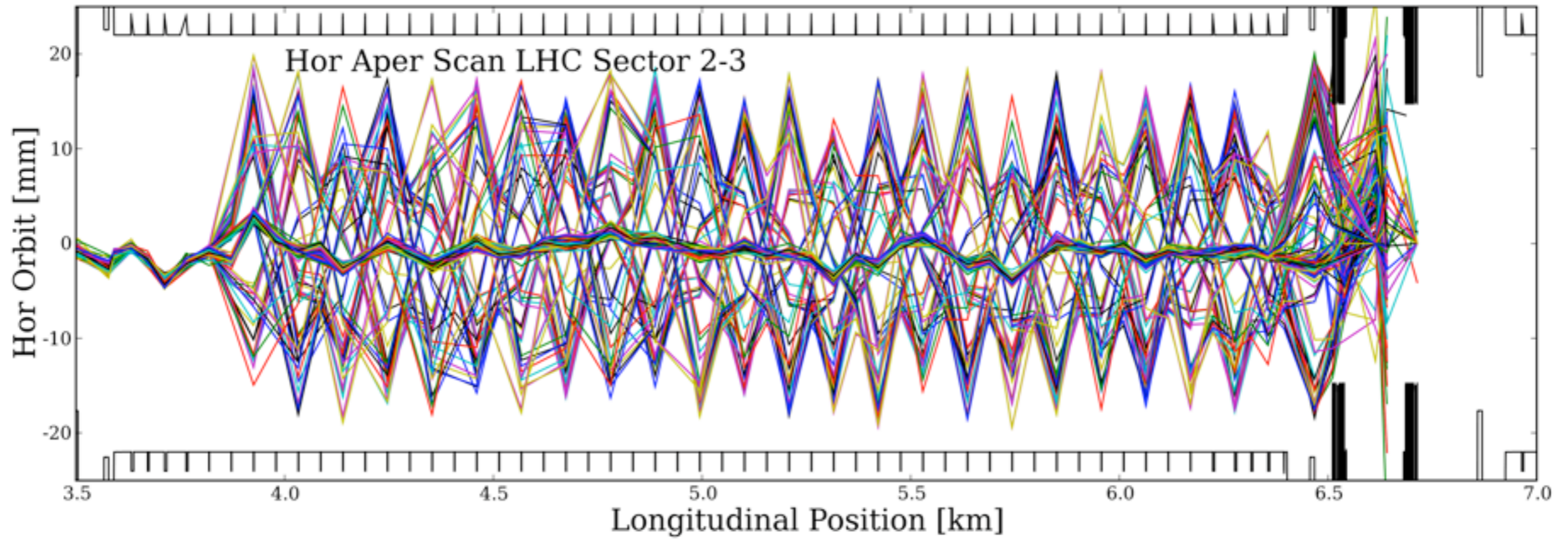
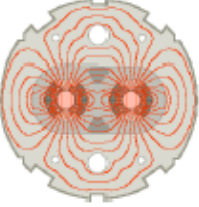


*We had about 4h of beam time.*

# Knobs for aperture scans

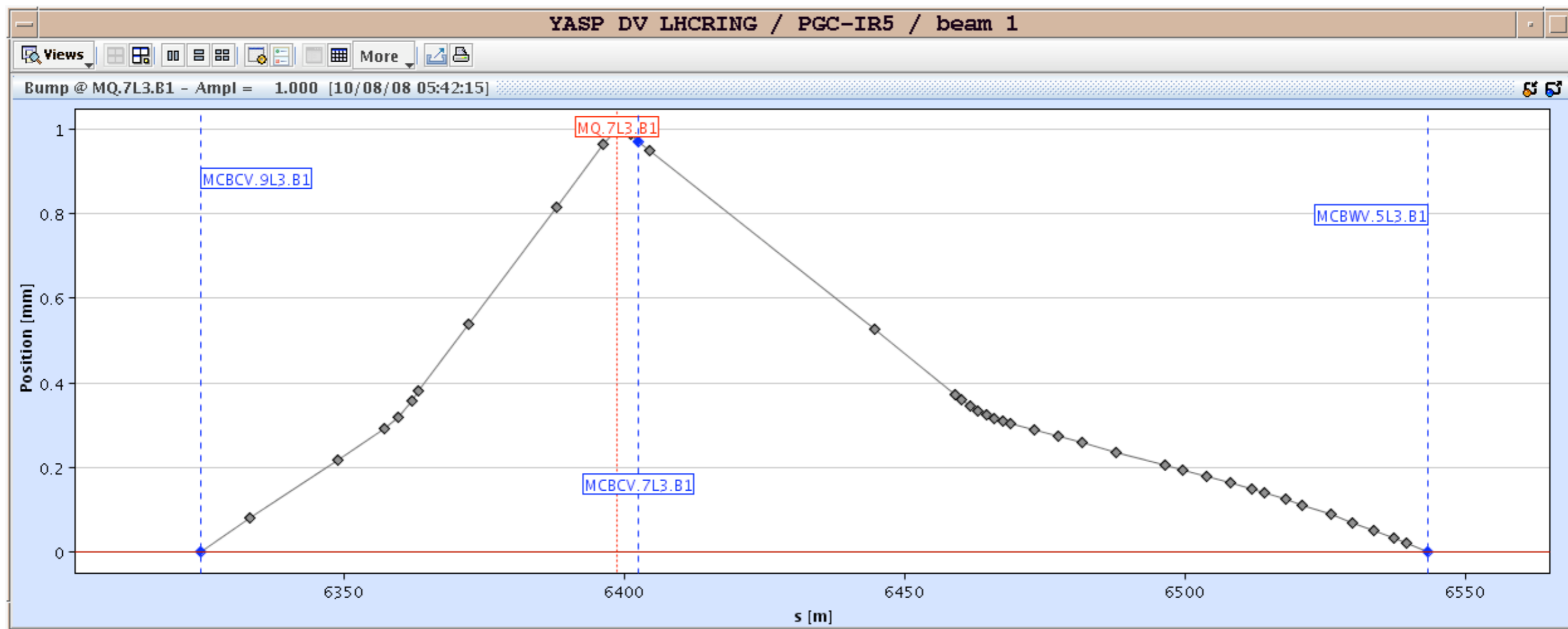
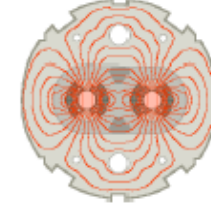


# Global arc aperture



Plot by R. Calaga

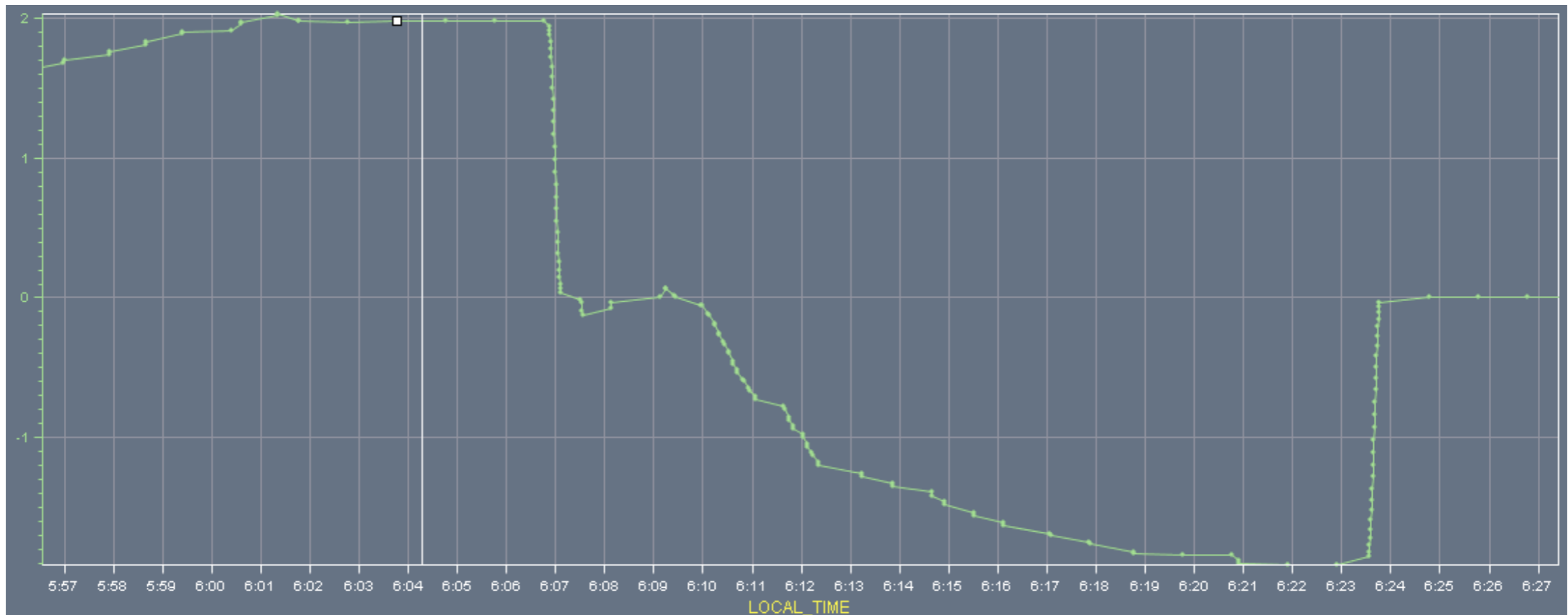
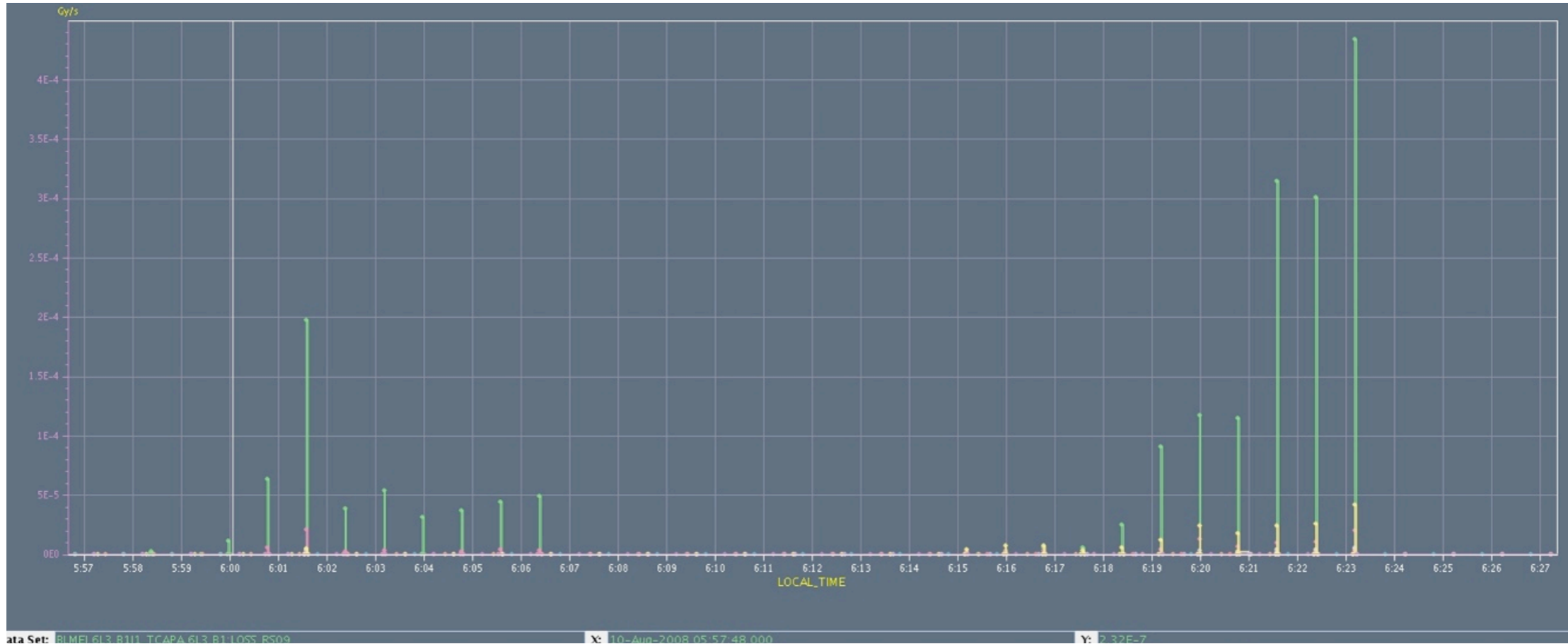
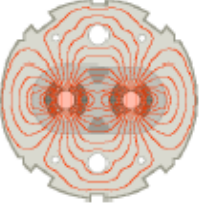
# Local bump at Q7.L3



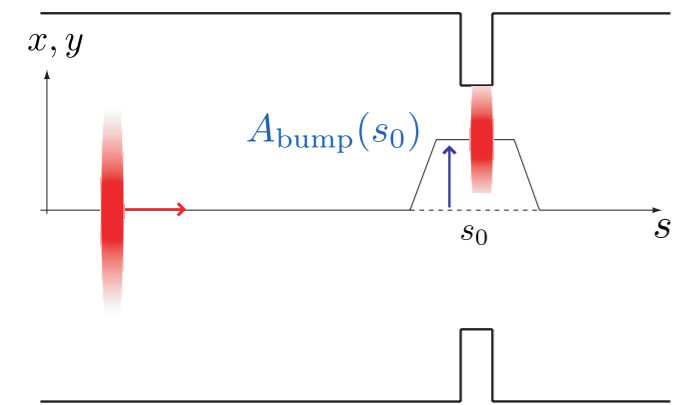
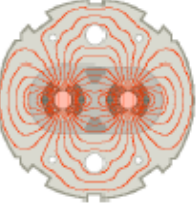
*YASP used for local bumps*



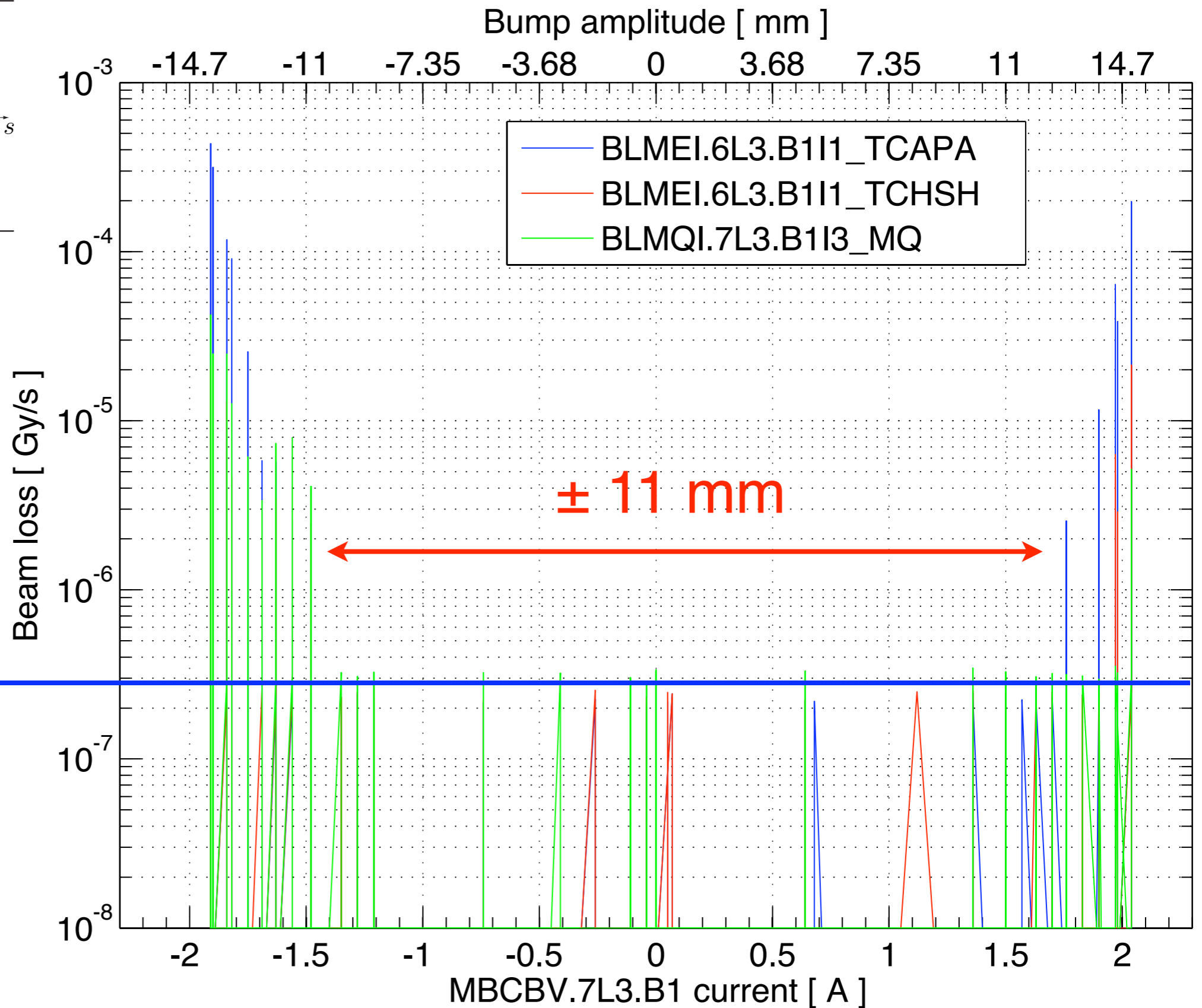
# Losses versus corrector strength



# Result of bump scan at Q7



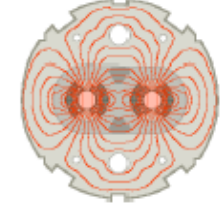
**BLM noise level**







# Summary of preliminary results



- ☑ Horizontal aperture in the arc is about  $\pm 18$  mm
- ☑ Vertically, we are limited at about 10 (nominal) sigmas in the Q8  $\rightarrow$  Q7.L3 region  
*Global arc scans could not go beyond  $\pm 10$  mm*
- ☑ Horizontal aperture “bottleneck” is Q6.L3, as expected  
*Still, we measured no losses with oscillations of more than 20 sigmas!*
- ☑ Local bump at Q7 shows an aperture of about  $\pm 11$  mm  
*No time to perform other local bumps*