

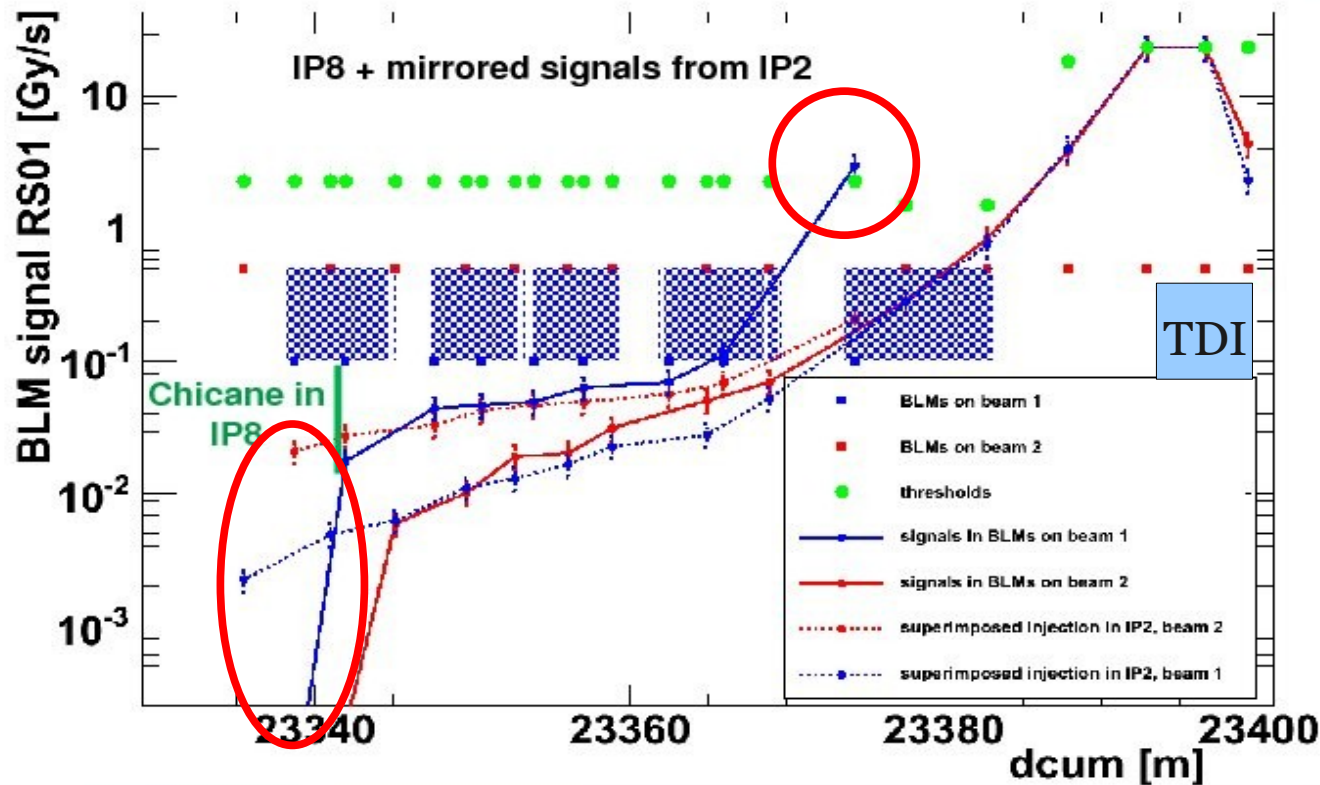
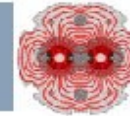
BLM signals at overinjection in IP8

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Origin of the problem(s)



Triplet at Over-Injection

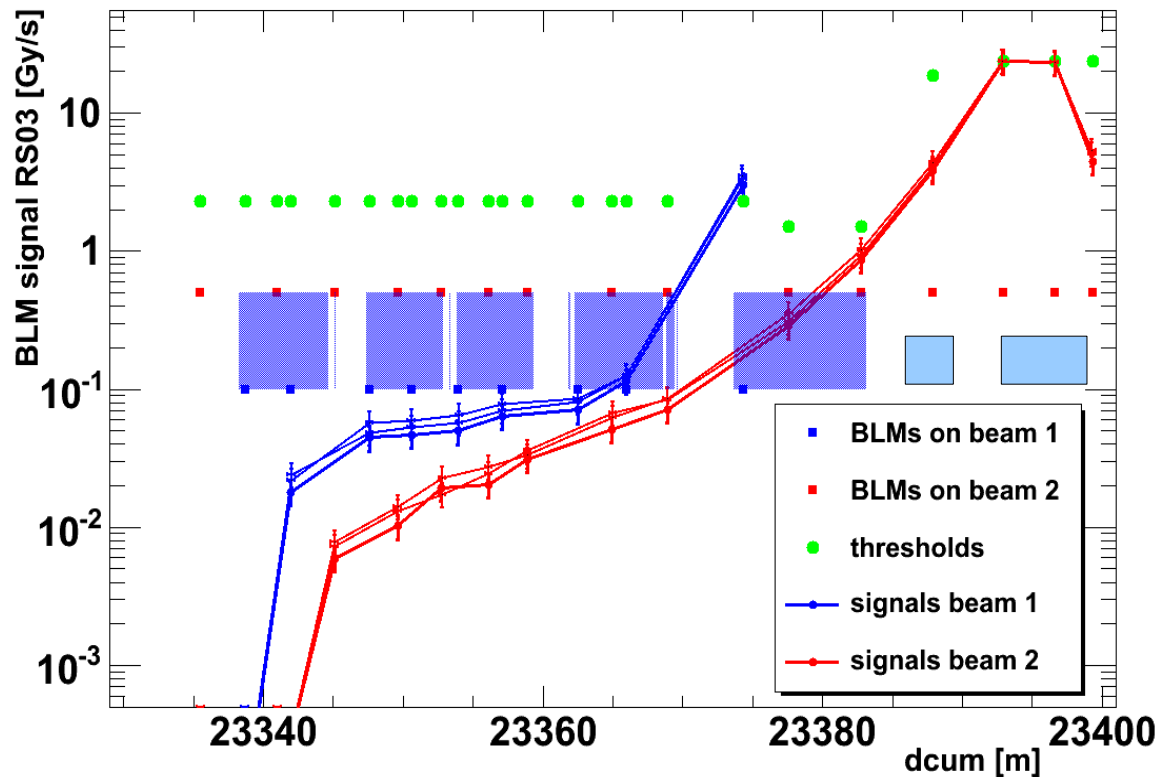


solid lines: IP8
dashed lines: IP2

main problem:
why signal on D1
in IP8 is above
threshold
protecting Q3?

interesting
observation:
why in IP8 the
cascade looks
“cut” in IP8 and
not in IP2?

Tests in December 2009 to investigate the overinjection



Observation: signals in BLMs on beam 1 systematically higher than on beam 2 while beam 2 injected – because of triplet symmetry they are expected to be the same

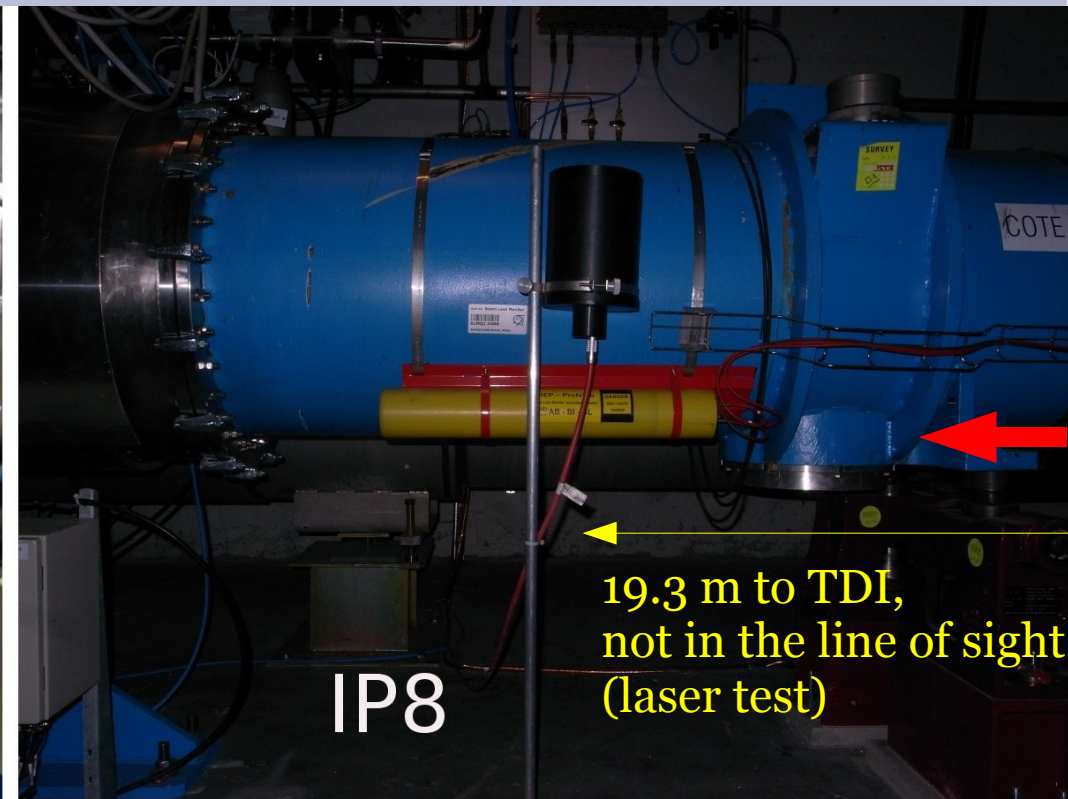
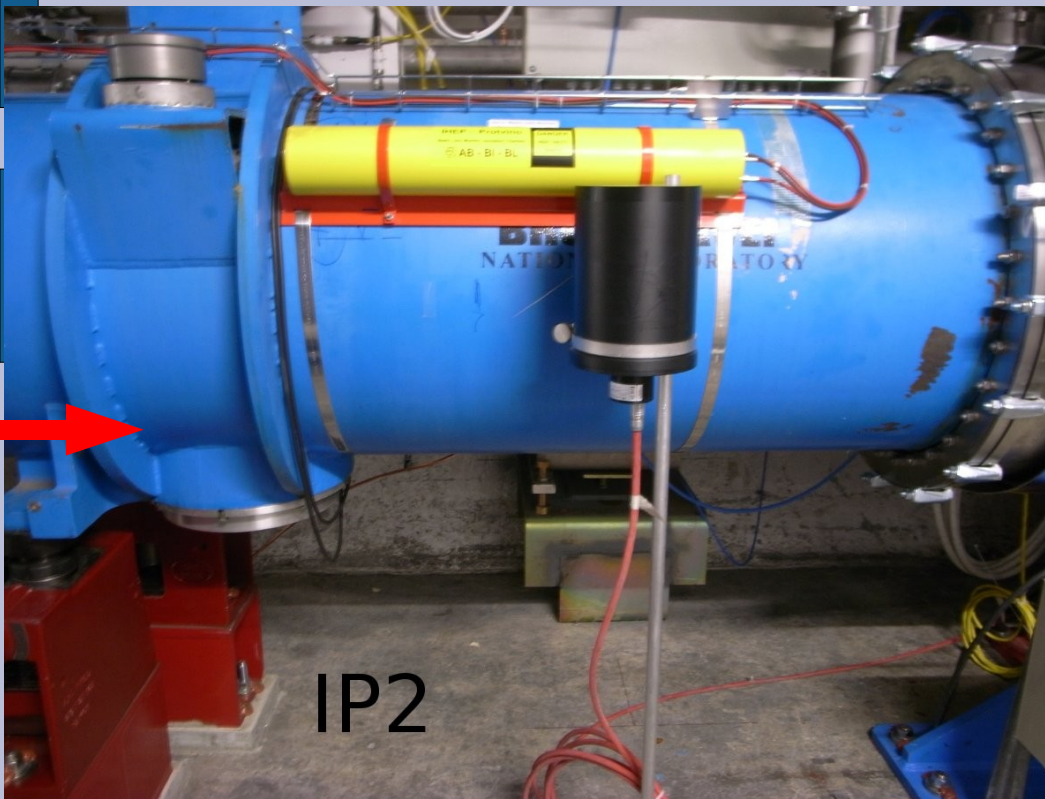
- overinjection, TDI open
- injection on closed TDI, kicker off
- in addition closed TCTV

Observation: signals do not change

Conclusion:

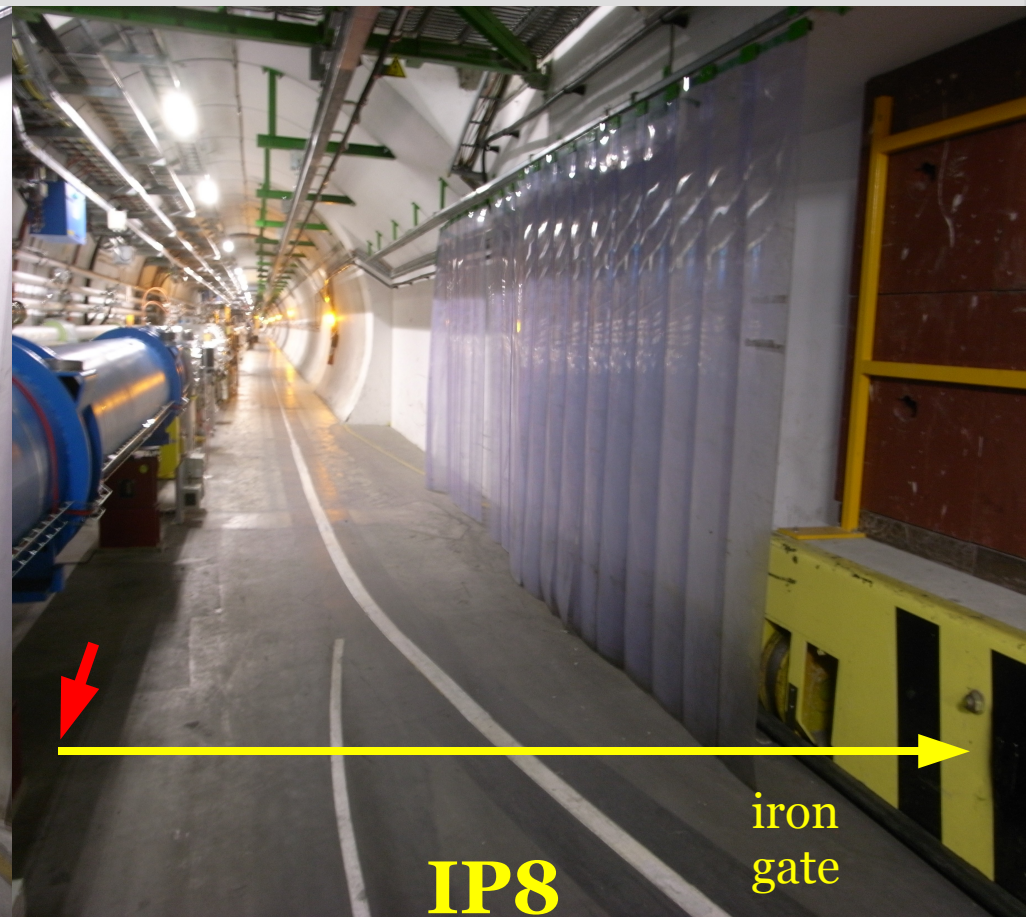
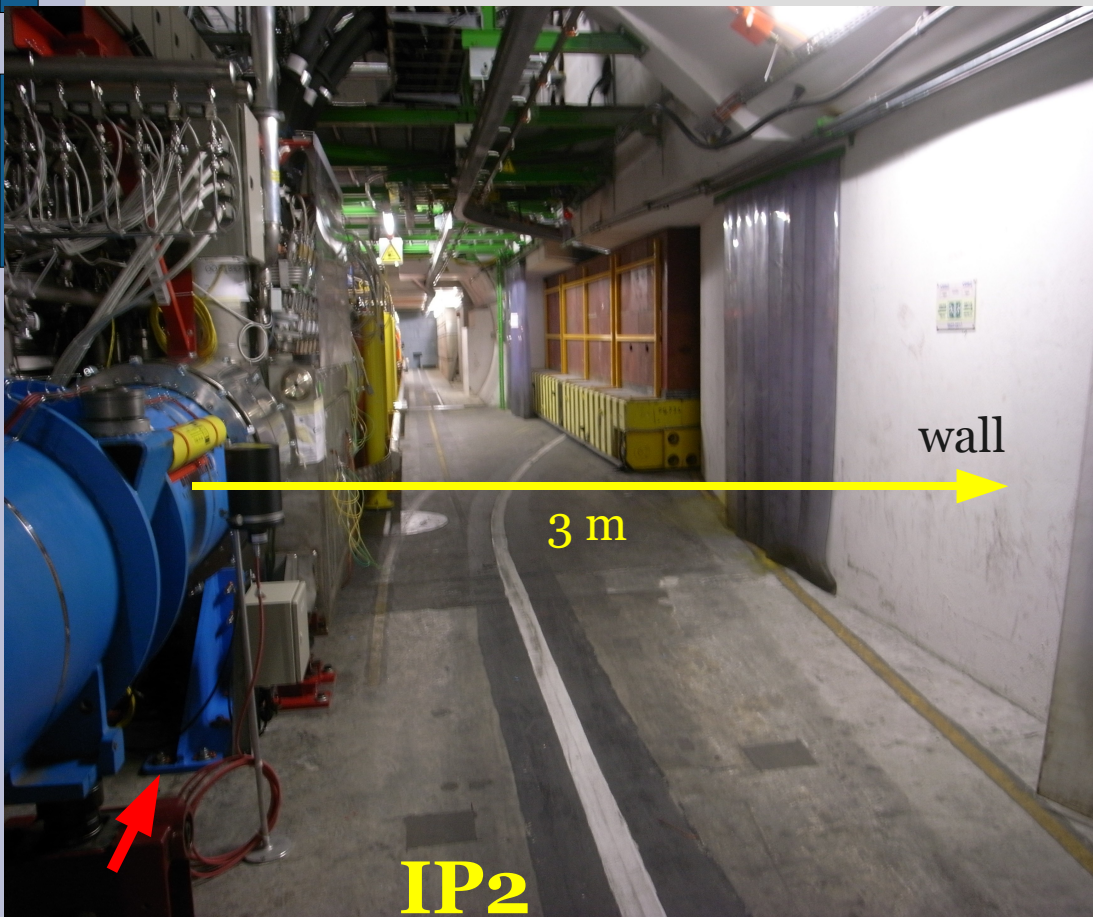
- signal in the BLMs comes from shower outside the cryostat

Inspection of IP2 and IP8

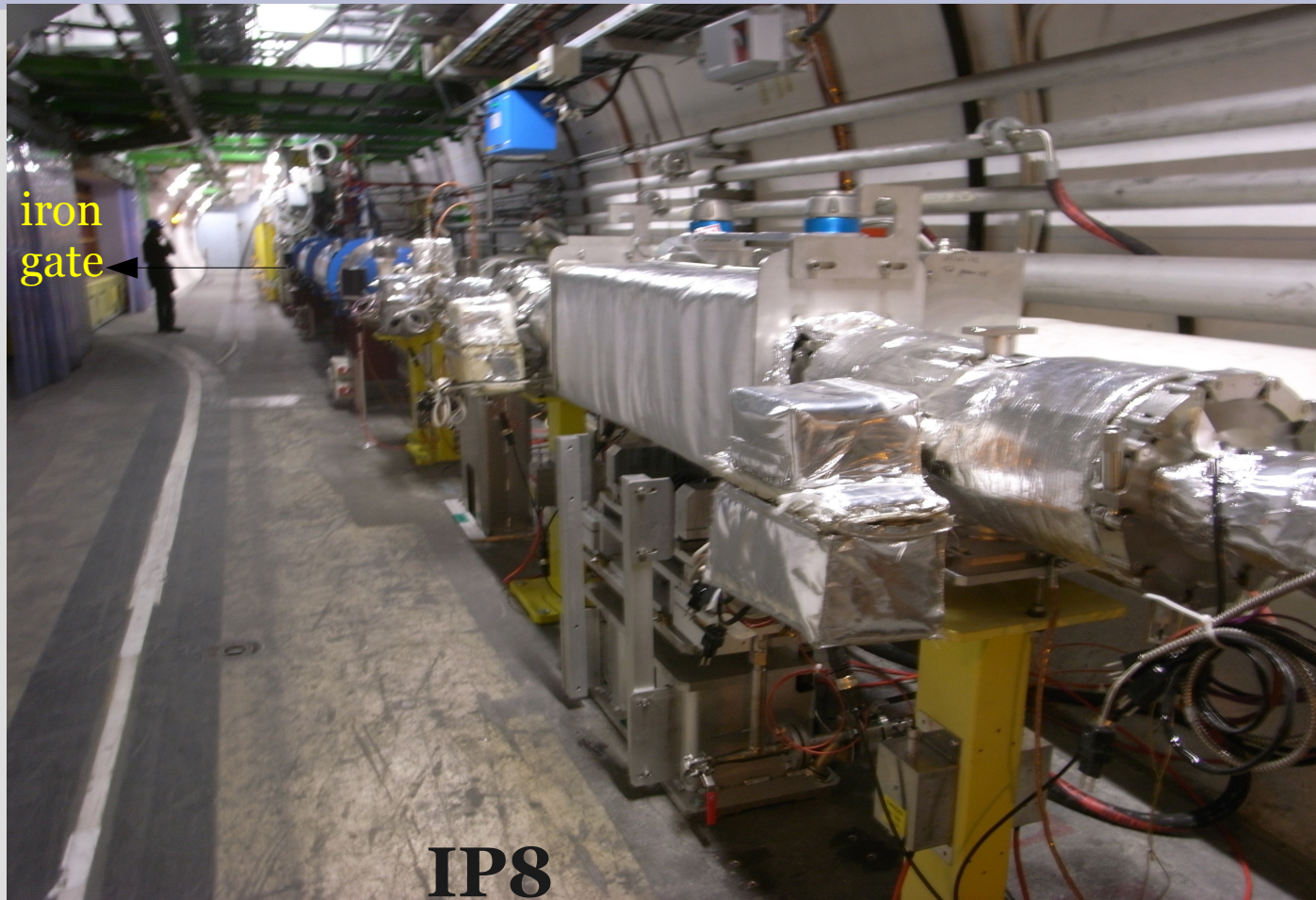


- Inspection: January 26th, 2010, with Laurette Ponce
- Next day monitor in IP8 has been moved up
- There is no guarantee that this solves the problem
- Data from Ramses monitors will probably not help to analyze the problem

Overinjection: another difference



Overinjection: another difference (II)

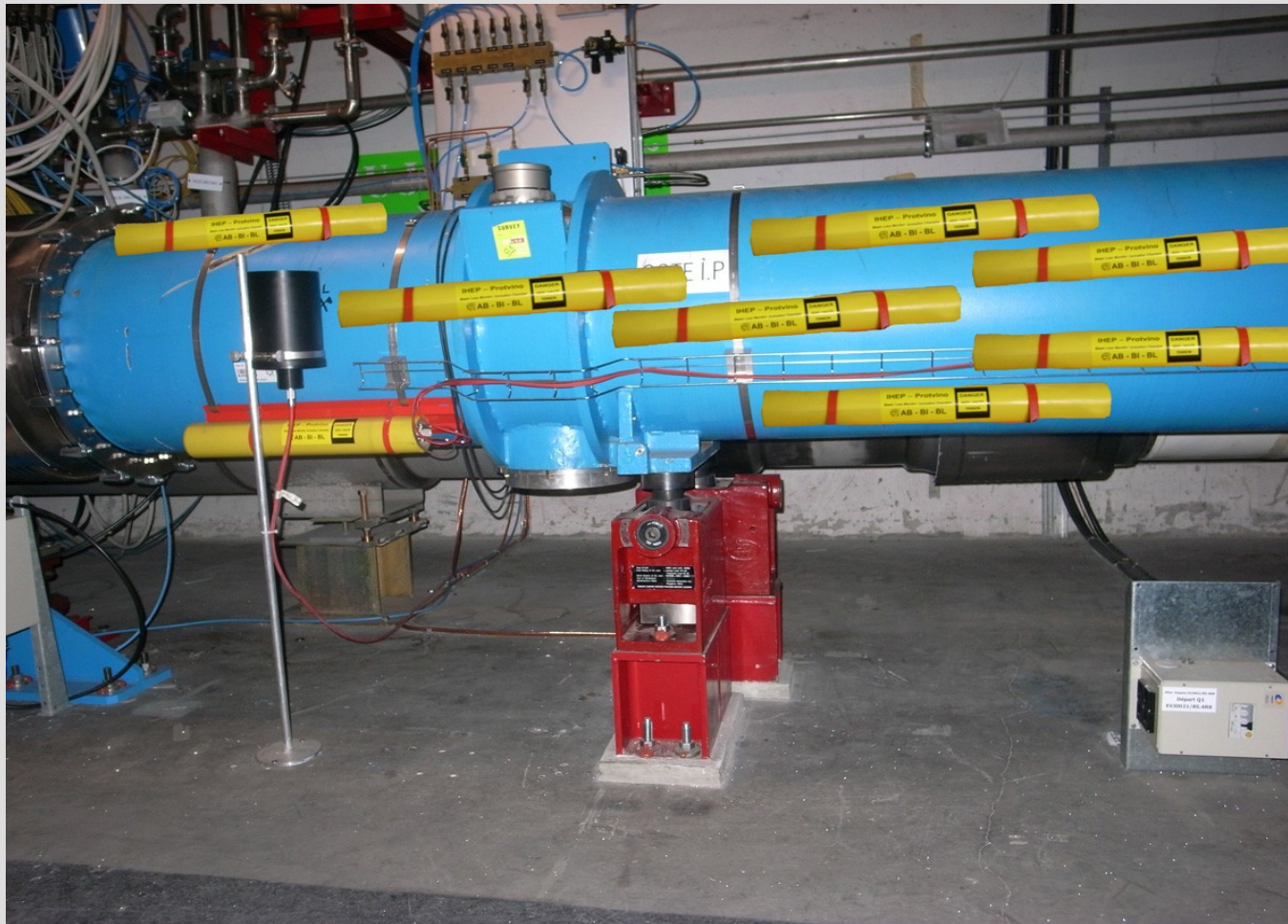


Overinjection: proposed solution

- Test overinjection and see if the monitor goes over threshold after change of its position
- If yes than load new thresholds to this monitors (this one is factor 3 below the expected quench level) – short term solution
- Long term solution:
 - shield (**simulation needed!**)
- For the monitors on the TDI (in saturation) – install capacitors to lower the fast signals.

Overinjection: proposed solution

- Or use ultimate protection:



Chicane in IP8

- Why signals in IP8 at the beginning of triplet are 2 orders of magnitude smaller than in IP2?
- There is a chicane in IP8 not present in IP2 (why?)
- This proves (again) that signals in the BLMs come from outside the cryostat

