

Cryogenic Collimators for Heavy Ion Operation

- q Cryogenic collimators recently proposed as part of Phase II Collimation scheme
 - See presentations by R. Assmann, T. Weiler in Collimation Phase 2 meeting 22 May, 11 July 2008:
 - q http://lhc-collimation-project.web.cern.ch/lhc-collimation-project/meeting_phase2.htm#Meetings
- q Clear benefits for reducing losses in cold magnets of dispersion suppressors around collimation insertions

Heavy-ion luminosity limit

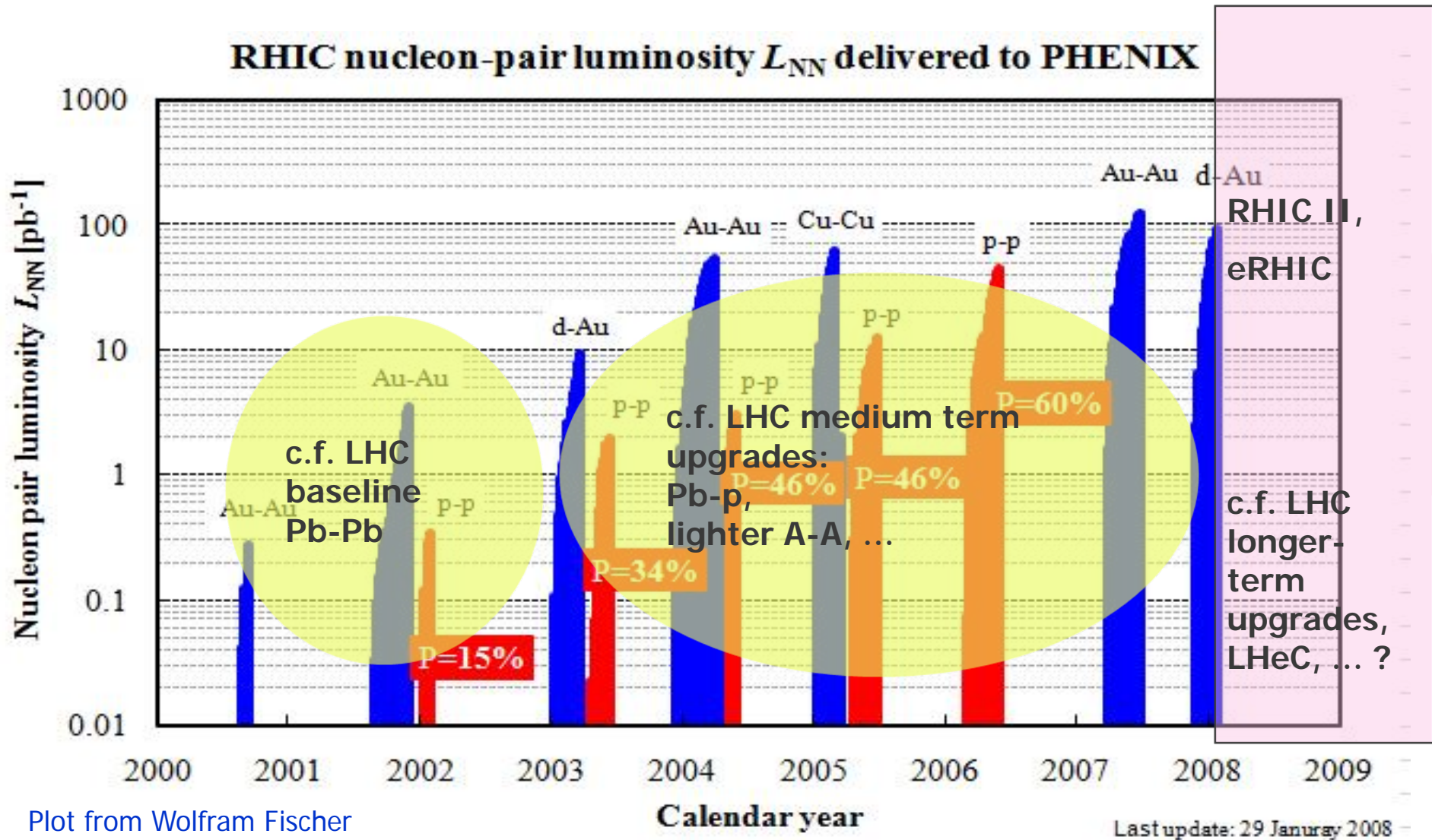
q Chamonix workshop 2003:

- When the luminosity limit from BFPP was first discussed, the “obvious” solution of installing collimators to intercept the BFPP secondary beam from the IP was “excluded” because they would have to be in a cold part of the machine.

q Now cryogenic collimators appear feasible, this solution can be revisited

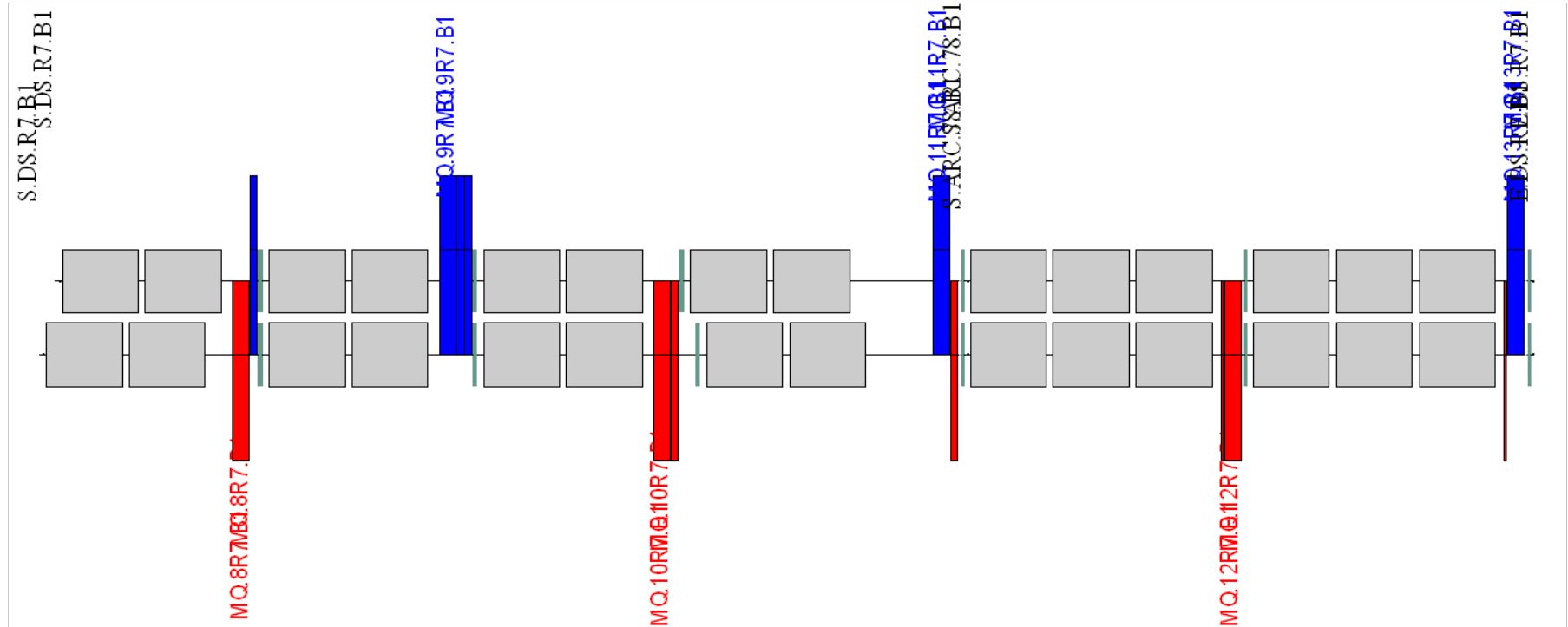
- Consider installation around ALICE in IR2, possibly also ATLAS, CMS
- Could raise luminosity limit well above design $10^{27} \text{ cm}^{-2} \text{ s}^{-1}$
- Potential path to future upgrade

RHIC programme as a model for LHC?



Plot from Wolfram Fischer

Changes in IR7 layout (right)

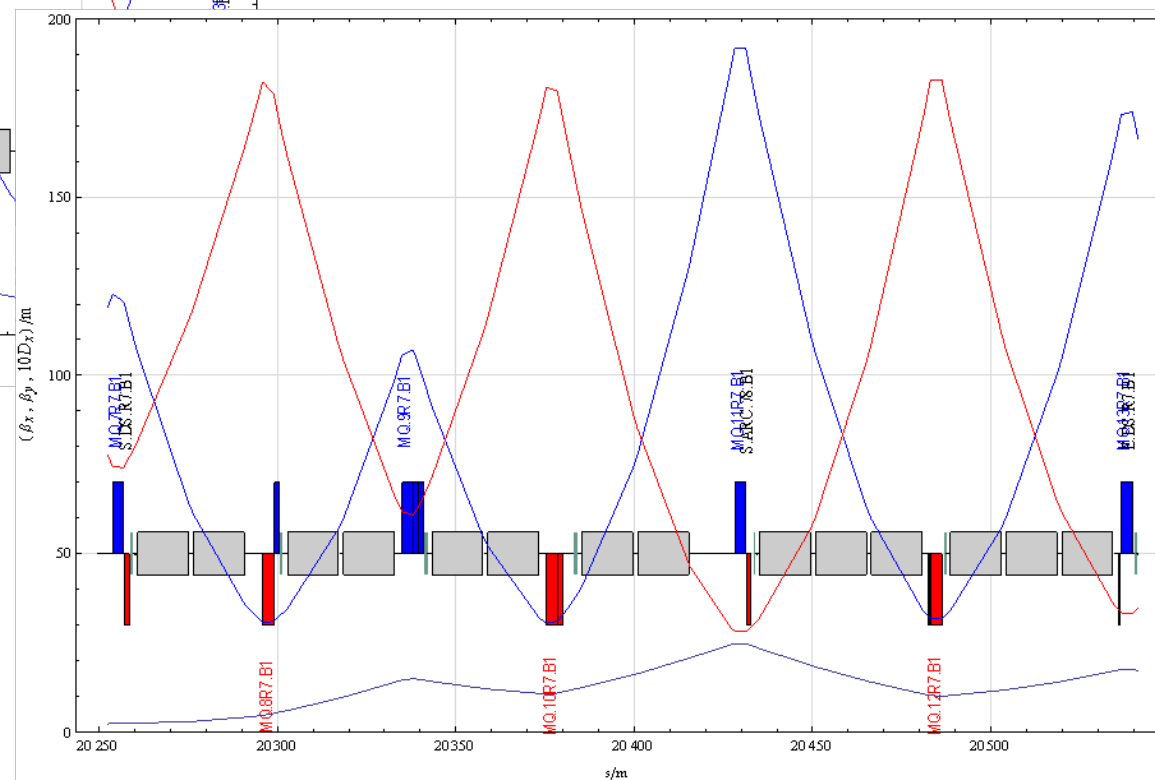
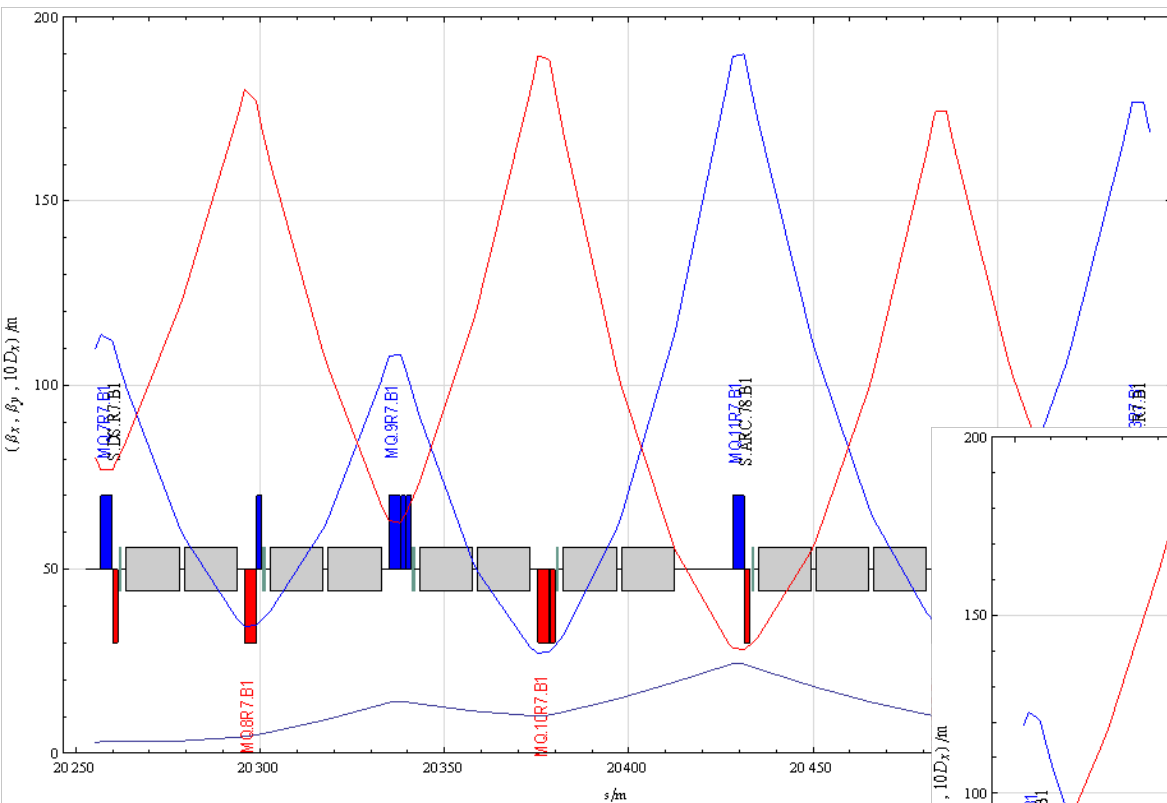


Similar layout changes implemented on left of IR7.

Plan to look at this also in IR2 – FP420 experiment ?

Implemented as changes to any standard LHC sequence (SEQEDIT ...).

Local optics, before and after (right of IR7)



Some matching still to be done

