

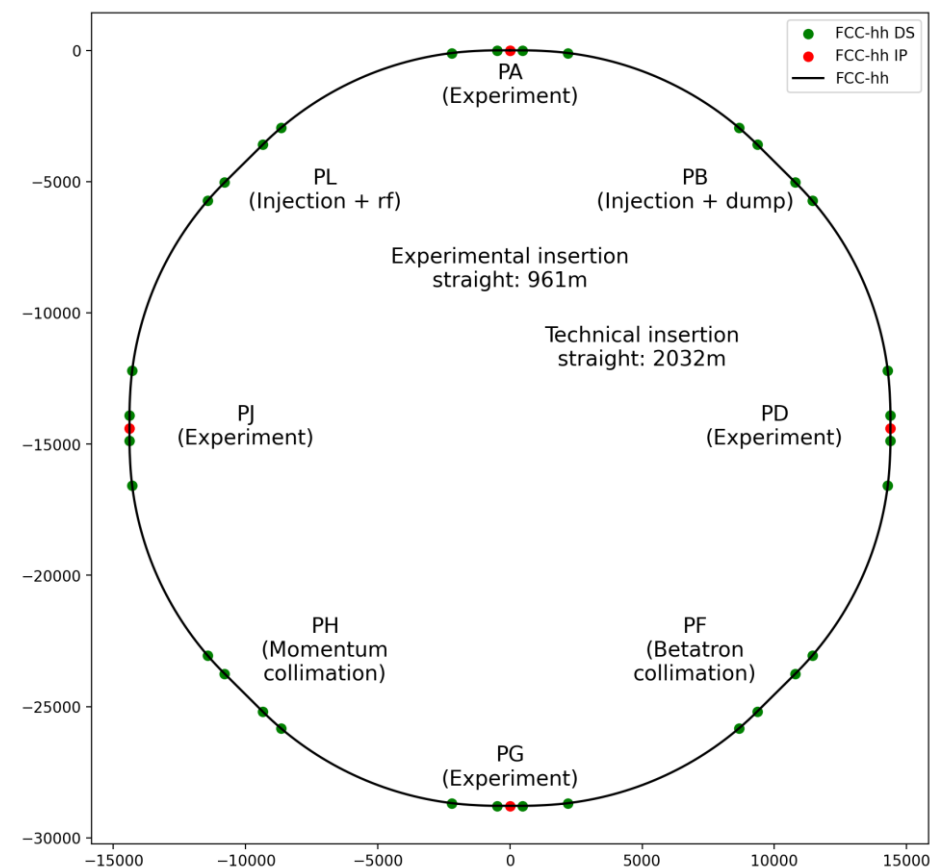


Proposal of a new configuration for PB

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Current layout of the FCC-hh ring

- IPA, IPD, IPG, IPJ: experimental insertions
- Two collimation insertions
 - IPF: betatron cleaning
 - IPH: momentum cleaning
- IPB: extraction (both beams) + injection (clockwise, external aperture)
- IPL: RF (both beams) + injection (counter-clockwise, external aperture)
- Last part of transfer lines in the ring tunnel
- Compatible with LHC or a superconducting SPS as injector

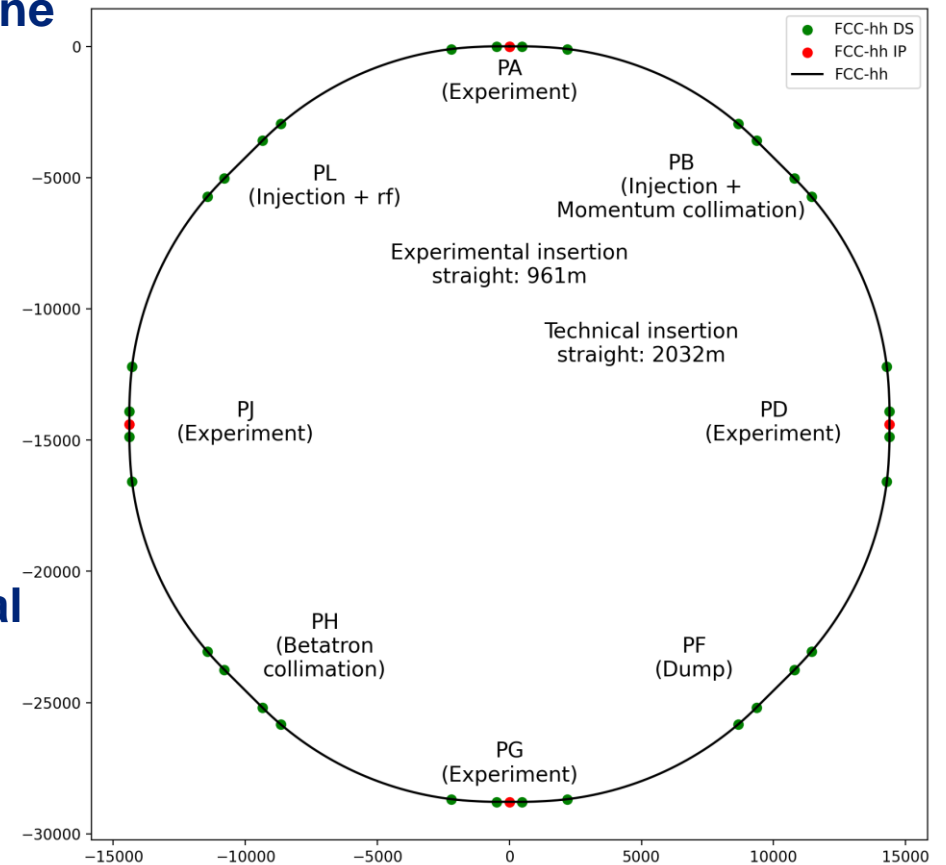


Circumference: 90.66 km

Alternatives to solve machine protection challenges

- A different arrangement of insertions would solve the machine protection challenges
- Two collimation insertions
 - IPH: betatron cleaning
 - IPB: momentum cleaning combined with injection (clockwise, external aperture)
- IPF: extraction (both beams)
- IPL: RF (both beams) + injection (counter-clockwise, external aperture)

In principle, one could also consider merging betatron and momentum collimation, but this seems really challenging in terms of optics design.

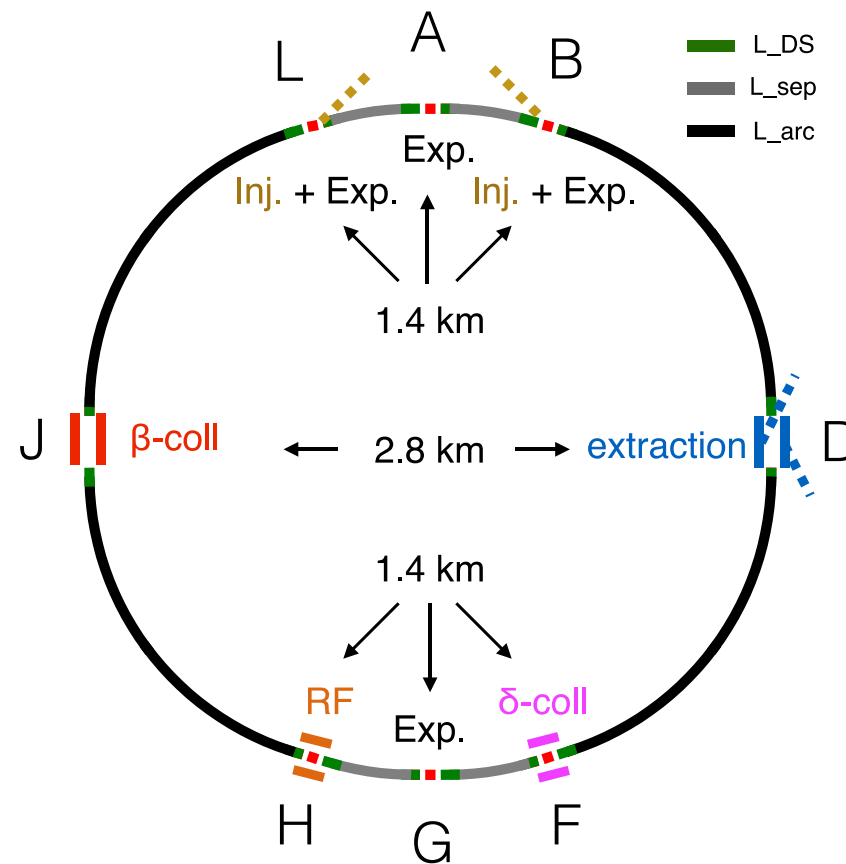




The CDR layout

- Two high-luminosity experiments (A & G)
- Two other experiments combined with injection (L & B)
- Two collimation insertions
 - betatron cleaning (J)
 - momentum cleaning (F)
- Extraction insertion (D)
- Clean insertion with RF (H)
- Compatible with LHC or a superconducting SPS as injector

The momentum cleaning insertion was located in a short straight section, 1.4 km long.



Circumference: 97.75 km

Possible layout of PB

- **Moving along the clockwise beam:**
 - **Injection section (inspired by PL, but optimised in length)**
 - **Transition region**
 - **Momentum collimation section**
- **Functions of the transition region**
 - **Create optical conditions for the downstream momentum collimation**
 - **Create a separation between the two sections to shield the kickers**
- **Goals of this meeting**
 - **Agree on the principle of this new layout.**
 - **Discuss on provide guidance to design the transition region for the shielding aspects.**

**Thank you for your
attention!**

