



Protection of magnet circuits for hollow e-lens (introduction)

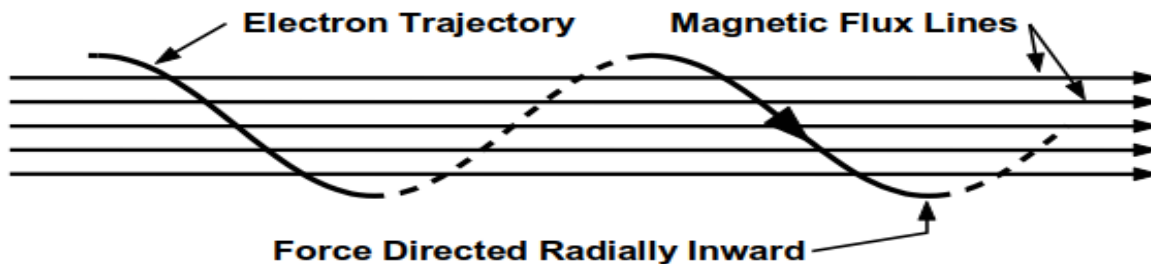
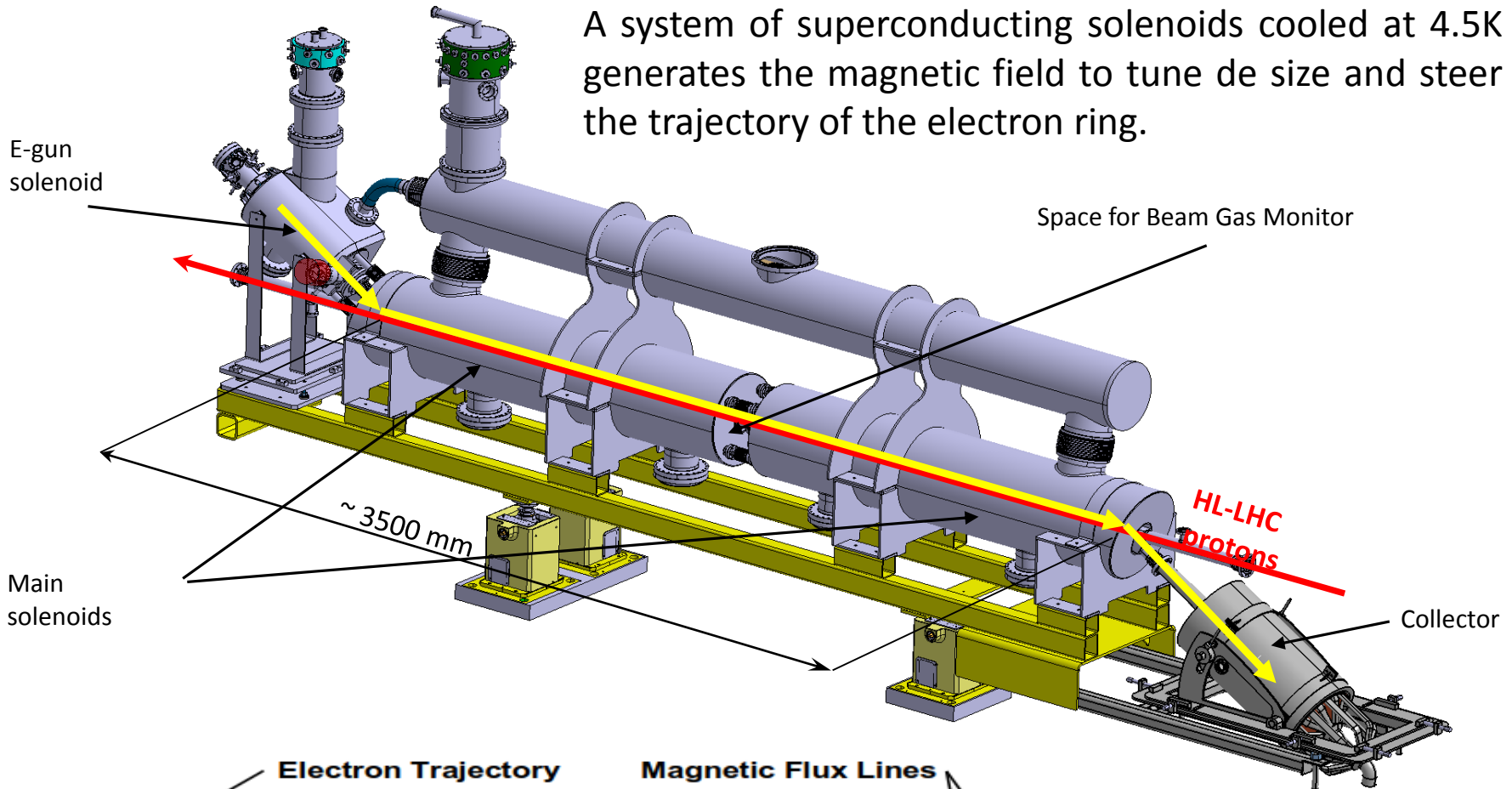
74th HL-LHC Technical Coordination Committee (TCC) meeting - 18.04.2018

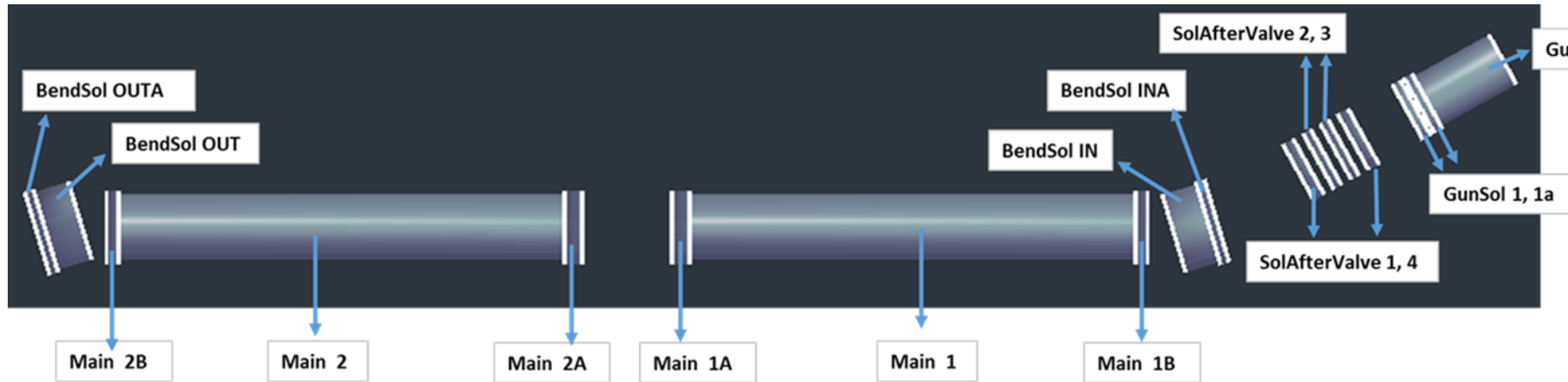
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The system configuration

Electrons are produced by the cathode of an e-gun. A system of superconducting solenoids cooled at 4.5K generates the magnetic field to tune the size and steer the trajectory of the electron ring.





Situation today:







- ❑ System of solenoids optimized.
- ❑ Correctors under definition. Beam dynamic computation in BINP.
 - Compensation of mechanical tolerances.
 - Tuning of beam position from injection to flat top.

EDMS 2036694 in work. Attention: table of correctors need to be updated.

LHC Collimation Upgrade Specification Meeting (CoLUSM) N114

<https://indico.cern.ch/event/808362/>

- SR commented that some changes have been done in the design compared to the one presented at the 2017 review. A summary in the following:

1. Increase of main solenoid field from 4T to 5T 
2. Additional windings at the extremities of the solenoids
3. There are 3 more circuits as tilted solenoids and new dipole which are not anymore in series to the main solenoids 
4. The orbit corrector dipole has been added 
5. There are now new correctors for the angle of the e-beam
6. The QPS is now needed 
7. A shielding for the magnetic field is also needed (but not yet designed)
8. Quadrupole corrector are not anymore part of the design 
9. Smaller beam aperture, now set to 60mm. 



Thank you for your attention

