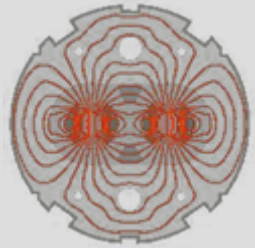
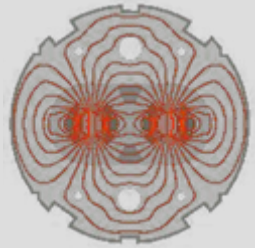
Relevance of the LHC 2-Beam PTC Description for the On-Line Model



- Short History of MAD-X
- What do we have?
- Set-up for use in the On-line Model

Short History of MAD-X



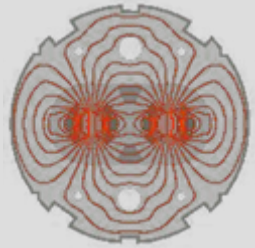
- MAD9 Debacle
- Grande schemes in C++ or Fortran90 out (politics, lack of expertise, "religion" etc.)

- Instead MAD-X: Poor man's approach
  1. Re-use Fortran modules of MAD8
  2. Core and memory management in C

- In Parallel: Develop PTC (Fortran90) to complement missing features expected from MAD9
  1. MAD-X compatibility mode
  2. Use PTC proper

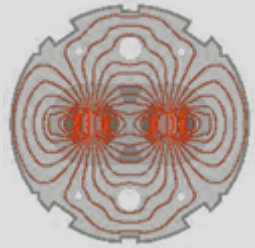
- *LHC complex described in PTC (September 2007)*

What do we have?



- Fully object oriented Description of the LHC
- Both beam arcs with IRs common to both beams
- Magnet assemblies on girders (e.g. Q2)
- Coupling of 2 in 1 magnets
- Aperture along the magnet including offset
- Misalignment of coupled magnets
- Thin lens description of magnets including error assignments
- Transfer Lines attached to LHC (CERN reference frame) & Beam Injection

Set-up for use in the On-line Model



- Make use of existing data base infrastructure

- Input to PTC
  1. Splitting of sequences (➔Grote)
  2. Girders
  3. 2 in 1 magnets
  4. Errors
  5. Misalignment
  6. Aperture

- Graphical display of trajectories best in 3D