Tutorial 6

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TUTORIAL 6: FIRST PART

LHC and MADX: the injection

- Retrieve the LHC injection optics from the repository. Download the LHC Run 1 protons, injection optics from http://lhc-optics.web.cern.ch/lhc-optics/www/
- Build a the MADX scripts to call the file and to twiss the machine.
- What is the LHC length? What is the s-position of IP1 and IP5? and the β-functions there?
- What are the beam1 and beam2 tunes at injections?
- Are the two beams colliding in IP1 at injection?

Tutorial 6: Second Part

LHC and MADX: the collision

- Retrieve the collision optics.
- Is the crossing of the two beams vertical or horizontal in IP1 at collision?
- What are the beta function at the IPs at collision energy? Why do we inject with a higher β-function at the IPs?