

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://lhcoptics.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?