

Polarity of the MERIT Magnet

H. Kirk

(Feb 7, 2008)

Update 12 Feb: The CERN power supply group claims that the RED lead of the magnet was + (as per usual convention)

⇒ Magnet field pointed upbeam.

⇒ Proton beam deflected to right (facing downbeam).

Normalizing the Gaussmeter



S



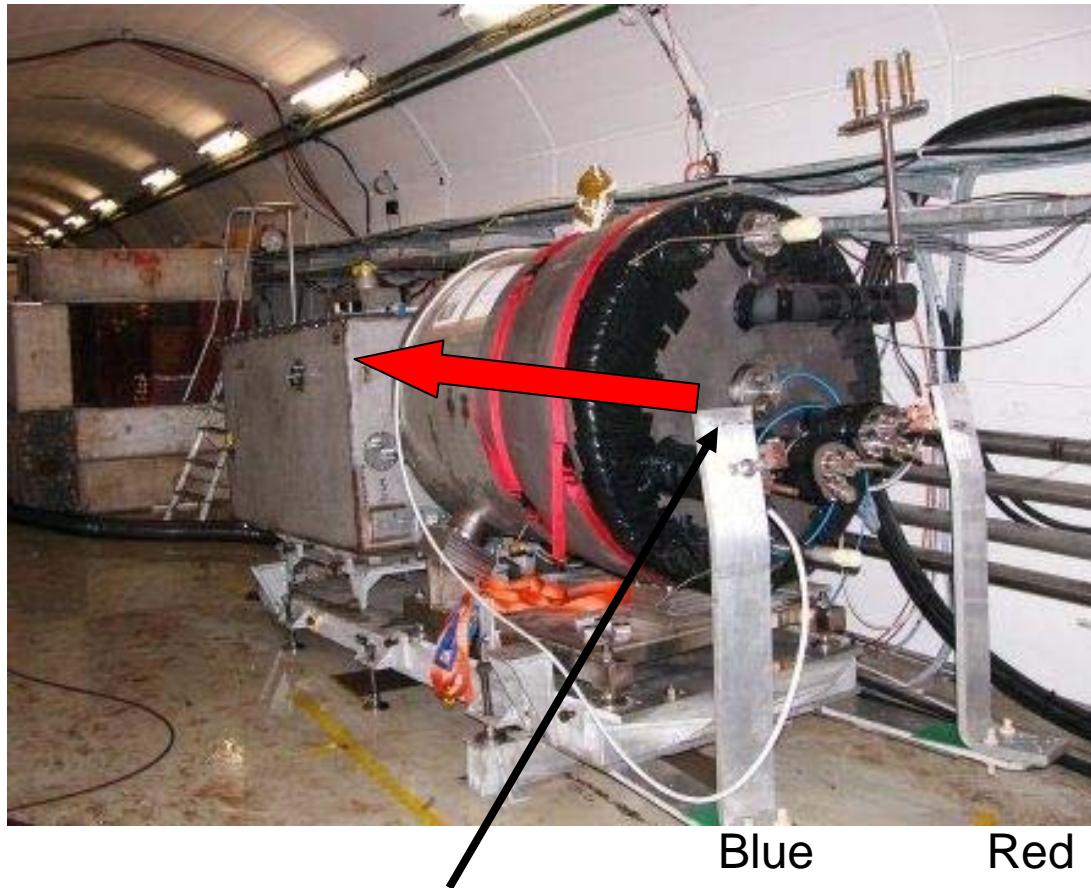
B = 2 Gauss

N

This is the correct orientation to bend protons to the right

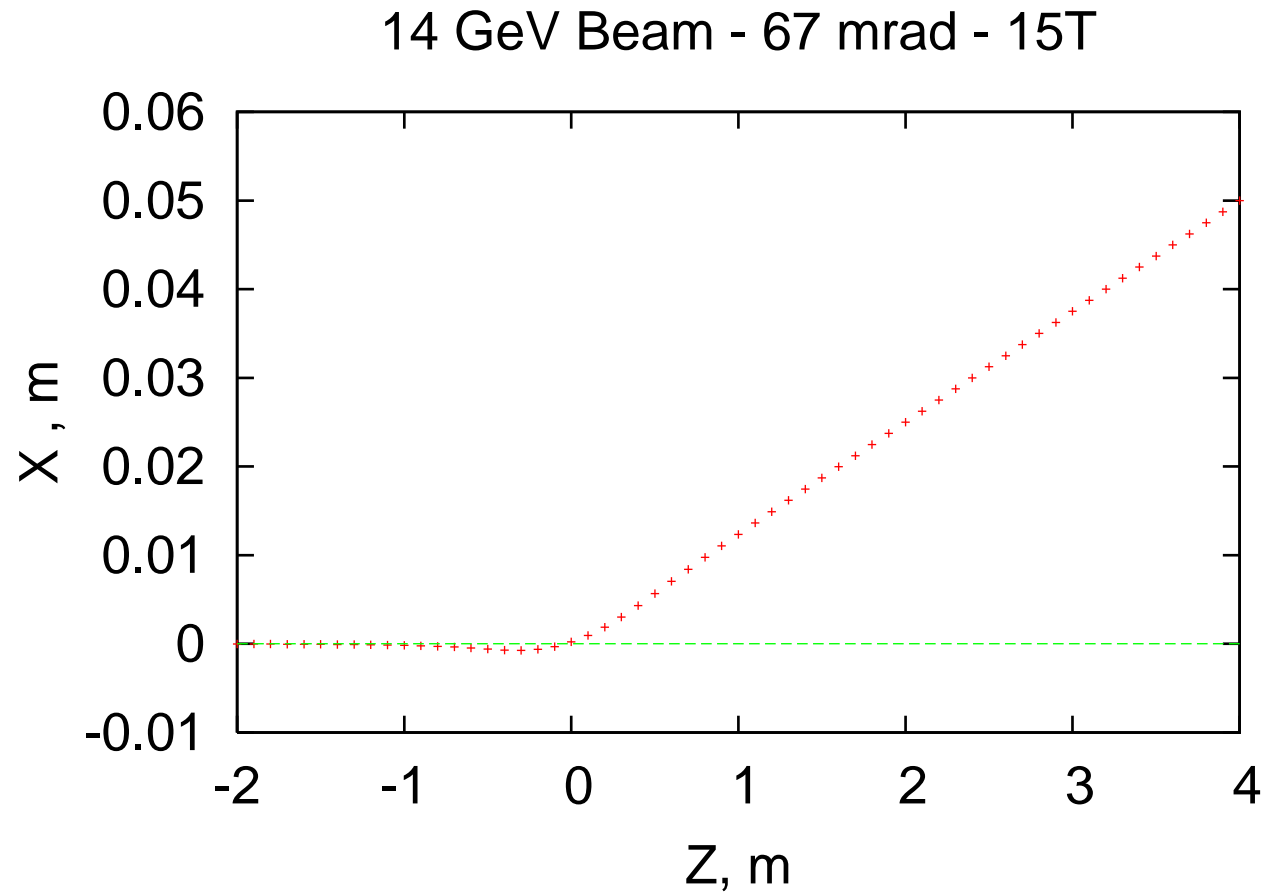
Use of the nTOF dipole residual field to determine correct polarity

Results



Positive Voltage here yields solenoid field pointing downstream of incoming beam direction

Calculated Proton Beam Trajectory



Positive particle with Positive P_z and P_y and Positive B-field is bent left