



Contribution ID: 36

Type: Poster

Fields extrapolation in the axial injection and central region of cyclotrons

Friday, 11 May 2012 11:50 (20 minutes)

IBA developed an evolution of its well-known Cyclone 30 cyclotron. The Cyclone 30XP is a multi-particle, multiport cyclotron capable of accelerating alpha particles up to 30 MeV (electrostatic extraction), deuteron (D-) beams between 7.5 and 15 MeV and proton (H-) beams between 15 and 30 MeV (stripping extraction). The cyclotron injection line, based on the Cyclone 70 design, has different external ion sources connected to a recombination magnet. The beam is axially injected in the cyclotron median plane through a spiral inflector. The Cyclone 30XP electrostatic inflector and central region design is very similar to the proven design of the high current Cyclone 30HC central region. However, a careful study was carried out in order to validate the geometry and injection efficiency for the various ion species. This leads to the opportunity to improve the IBA particle tracking code.

This poster describes a new method of magnetic field extrapolation in the inflector volume based on magnetic field measurements along the injection axis and in the median plane of the cyclotron.

Please indicate preferred presentation (poster or talk?)

poster

Primary author: Dr NUTTENS, Vincent (IBA)

Co-authors: ZAREMBA, Simon (IBA); KLEEVEN, Wiel (IBA)

Presenter: Dr NUTTENS, Vincent (IBA)

Session Classification: Poster Session