Contribution ID: **10** Type: **not specified**

Compact FFAG for Radioisotope Production

Tuesday, March 15, 2016 9:00 AM (35 minutes)

A design of a Fixed Field Alternating Gradient (FFAG) accelerator has been made for the production of radioisotopes, in particular 99m-Tc and a number of therapeutic isotopes currently in short supply. As well as fixed magnetic fields, this machine is isochronous at the level of 0.3% up to at least 28 MeV and hence able to operate in constant wave (CW) mode. Detailed tracking studies with the OPAL (Object Oriented Parallel Accelerator Library) code, including the effects of space charge, have demonstrated the ability to accelerate a beam with a current of up to 20 mA, significantly larger than achievable with any current cyclotrons. The accelerator is able to deliver beams of both protons and alpha particles. Two target options for the production of radioisotopes are being considered. The first uses a thin internal target. The huge acceptance of the accelerator allows the beam to be recirculated many times, the lost energy being restored on each cycle. In this way, the production of 99m-Tc for example, can take place at the optimum energy. The second option is to use an electrostatic deflector and septum for extraction. This will allow the clean extraction of high current beams, for example alphas for the production of therapeutic isotopes.

If a proceedings is prepared,
</br> will you submit a contribution?

Yes

Primary author: BRUTON, David (University of Huddersfield)

Presenter: BRUTON, David (University of Huddersfield)

Session Classification: Morning session (Chair: A. Faus-Golfe)