

**CYCLONE44: a Radioactive Ion Beam Postaccelerator - Mass Separator\***, J.M. COLSON, M. GAELENS, M. LOISELET, N. POSTIAU, G. RYCKEWAERT, Univ. Cath. de Louvain; L. JACOBS, T.U. Eindhoven - CYCLONE44 is a  $K = 44$  MeV, compact, variable energy cyclotron, specially designed and built by the University's Cyclotron Research Centre (CRC), to combine efficient acceleration and very high isobaric separation of radioactive ion beams for experiments in the field of Nuclear Astrophysics. Ions with a mass to charge ratio in the range of 4 to 14 can be accelerated to energies from 0.2 to 0.8 MeV/AMU using harmonic modes 8 and 6. Ion beams are axially injected from external ECR-sources, accelerated by a particular two-"DEE" system and extracted by an electrostatic deflector. The mass resolution for isobaric beams is 1 part in 10.000 with a typical rejection of the unwanted ion of 100.000 to 1. This paper reviews the specific design options which have been chosen to realize these characteristics and, in particular, the centre region geometry and the related beam dynamics. Measured characteristics of the first accelerated stable beams will be reported.

\* Work supported by the Belgian State's SSTC and by the IISN.