First negative halogen beams produced at PSBooster-ISOLDE

T. Stora, E. Bouquerel, R. Catherall, M. Eller, J. Lettry, M. Menna, R. Wilfinger and the ISOLDE collaboration

AB Department, CERN, CH-1211 Geneva 23

Chemically pure radioactive halogen beams have interesting potentials for solid state and nuclear physics, for instance for implantation studies or in precise $\beta$-decay measurements. They can be produced as positive ions by the ISOL approach, with potential isobaric contaminations, or as pure negative ion beams, with a LaB$_6$ negative surface ion source. Here, we present data on the first negative beams produced online at ISOLDE since the use of a pulsed 1.4 GeV proton primary beam delivered by the CERN PS-Booster complex. This permits the determination of precise time release structures of a UCx target-LaB$_6$ ion source for Br, Cl and I RIBs. Yields and estimations of in-target production are finally compared to those obtained at SC-ISOLDE with continuous beams of 600 MeV protons.

We acknowledge the financial support of the EC under the FP6 "Research Infrastructure Action - Structuring the European Research Area" EURISOL DS Project; Contract No. 515768 RIDS.