



Contribution ID: 28

Type: **Poster Presentation**

Extraction and low energy beam transport from a surface ion source at the TRIUMF-ISAC facility

Monday, 11 May 2015 16:30 (0 minutes)

A large fraction of radioactive beams produced and delivered at TRIUMF's isotope and accelerator facility, ISAC, are using either a surface ion source or a resonant ionization laser ion source, which share a common design. To characterize the operation of the ion sources, simulations were performed to determine the ion beam optics and beam envelope properties of the extracted beam. Furthermore ion-optics calculations were performed to determine the transmission through the mass separator magnet and the subsequent emittance of the beam. The recent addition of a channeltron to the Allison emittance meter scanner now allows us to measure emittances for ion beams with intensities as low as 10^5 ions/sec. This is particularly useful for establishing high resolution, high throughput mass separator tunes for radioactive isotope beams. This paper describes the modification to the Allison emittance meter allowing emittance measurement of low intensity beams and we will show typical emittance scans for the surface ion source and the resonant laser ionized source for different source parameters. The observed results are compared to the simulations and discussed.

Primary author: Dr SEN, Ayanangsha (TRIUMF)

Co-authors: Mr MJOS, Anders (TRIUMF); Mrs LAXDAL, Aurelia (TRIUMF); Dr AMES, Friedhelm (TRIUMF); Dr LASSEN, Jens (TRIUMF); Dr BRICAULT, Pierre (TRIUMF)

Presenter: Dr BRICAULT, Pierre (TRIUMF)

Session Classification: Poster Session A