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Status of the CANREB high resolution separator at TRIUMF

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A new ISOL rare isotope beam production facility, ARIEL, is under construction at TRIUMF. ARIEL aims at increasing the delivery of radioactive beams three fold with respect to the present capability of the ISAC facility. Part of ARIEL is the new CANREB equipment that can be described by the two main functionalities: a charge breeding system that includes RFQ cooler, EBIS and Nier separator, and a high resolution mass separator system. The latter is designed to achieve a resolving power of twenty thousand for a transmitted emittance of three micrometer. The separator optics has been designed with symmetry in order to minimize high order aberrations. The dispersion of the system is created by two identical ninety degrees magnetic dipoles with a field flatness of one part in one hundred thousand. The dipoles are tested and the magnetic field characterized before being installed on line for operation. High order aberrations can also be corrected by an electrostatic multipole; this features a novel design as well as a new tuning technique. In this paper we will present the latest results from the field characterization and discuss the high level application to tune the multipole.

Primary author: Dr MARCHETTO, Marco (TRIUMF)

Co-authors: Dr AMES, Friedhelm (TRIUMF); Prof. BAARTMAN, Rick (TRIUMF); Dr BARQUEST, Carla (TRIUMF); Mr BROWN, Steve (Buckley Systems Ltd.); Mrs CORWIN, Margaret (University of Waterloo); Mr KIY, Spence (TRIUMF); Prof. MALONEY, James (Dakota State University); Dr PLANCHE, Thomas (TRIUMF); Mr SEHAYEK, Daniel (University of Waterloo)

Presenter: LASSEN, Jens (TRIUMF)

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