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## 18 - Improvement of the Efficiency and Beam Quality of the TRIUMF Charge State Booster

*Tuesday 4 June 2019 16:53 (2 minutes)*

At TRIUMF charge breeding of rare isotopes is based on an Electron Cyclotron Resonance Ion Source (ECRIS). A modified 14.5 GHz PHOENIX booster from Pantechnik is being used to boost the charge of rare isotopes after production from the sophisticated TRIUMF target stations in order to match the acceptance velocity of the TRIUMF LINAC. To improve the efficiency of the breeder, a two-frequency heating and frequency tuning technique of the source plasma will be implemented, and the improvement of the beam quality (emittance) will be investigated by simulating the extraction system of the breeder to explore the systematics of beam emittance versus plasma and extraction parameters and subsequent measurements. Quadrupole scan technique method will be used to measure the emittance of the breeder.

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