Contribution ID: **286** Type: **Poster**

A dedicated RFQ cooler and buncher for MORA at DESIR

The MORA project [1] aims to measure the D correlation in nuclear beta decay with high precision to look for CP violation, using a transparent Paul trap and laser orientation techniques. It is currently located at JYFL (Finland), using a 23Mg beam provided by the IGISOL facility. MORA will next be moved to the DESIR experimental hall (GANIL, France) to perform decay measurements using both ^{23}Mg and ^{39}Ca beams. This move is motivated by the higher beam intensity and improved purity available at DESIR, which are essential for achieving the desired experimental sensitivity.

To connect MORA to DESIR, a dedicated RFQ cooler and buncher (RFQ-CB) is currently under development. It is located just a few meters from the MORA Paul trap. The intent is to deliver 10^7 ions per bunch into MORA, with the objective of capturing up to 10^6 ions in the Paul trap.

This poster presents the current state of the RFQ-CB development. The design of the RFQ-CB and the pulse-drift tubes used to decelerate the bunches are presented, along with ion optics simulations performed using SIMION. The status of the mechanical design and manufacturing process will be discussed, as well as the commissioning phase of the project.

[1] P. Delahaye, E. Liénard, I. Moore et al., The MORA project, Hyperfine Interactions 240, 1–13 (2019).

Author: BOSQUET, vincent (LPC Caen)

Co-authors: DE ROUBIN, Antoine (LPC Caen); KANKAINEN, Anu (University of Jyväskylä); FOUGERES, Chloe (CEA/DIF); LIÉNARD, Etienne (LPC Caen); DE OLIVEIRA, Francois (GANIL); NEYENS, Gerda (KU Leuven); QUEMENER, Gilles (CNRS/IN2P3 - LPC Caen); FREMONT, Goerges (Ganil); GUERIN, Hugo (GANIL); MOORE, Iain (University of Jyväskylä); THOMAS, J-C. (GANIL); HAYEN, Leendert (LPC Caen); MOTILLA MARTINEZ, Luis Miguel (University of Caen, GANIL, University of Jyvaskyla); Dr STRYJCZYK, Marek (University of Jyväskylä); BISSELL, Mark (CERN); GONZALEZ-ALONSO, Martin (Universidad de Valencia); REPONEN, Mikael (University of Jyväskylä); SEVERIJNS, Nathal (KU Leuven, Dept. of Physics and Astronomy, Inst. for Nuclear and Radiation Physics, Celestijnenlaan 200d, 3001 Leuven, Begium); LECESNE, Nathalie (GANIL); DELAHAYE, Pierre (GANIL); DE GROOTE, Ruben; VANLANGENDONCK, Simon; ERONEN, Tommi (University of Jyväskylä); VIRTANEN, Ville (University of Jyväskylä); Dr FLECHARD, Xavier (LPC Caen); MERRER, Yvan (LPC Caen); Dr GE, zhuang (University of Jyväskylä)

Presenter: BOSQUET, vincent (LPC Caen)

Session Classification: Poster session

Track Classification: Accelerators and Instrumentation