



Contribution ID: 70

Type: **Poster and Speed Talk**

## **Simulations and measurement results of a radially coupled fast faraday cup with increased signal strength**

*Thursday 4 July 2024 16:31 (3 minutes)*

Longitudinal bunch shape and mean energy of high-intensity heavy ion beams accelerated at the GSI UNILAC up to 11.4 MeV/u may differ from macro-pulse to macro-pulse and even within a single macro-pulse. Fast Faraday Cups (FFC) are able to measure these changes with high precision. A study on different FFCs has been performed and showed very promising results for a radially coupled FFC (RCFFC). An adapted version of the RCFFC used in the study has been designed to increase the signal strength while still suppressing the secondary electrons as much as possible. We present simulations and measurement results of the FFC study combined with the latest results of the new high-current radially coupled FFC (HCRCCFFC) investigating the bunch shapes and longitudinal emittance of the beam @GSI X2.

### **Summary**

**Author:** KLAPROTH, Stephan (Technische Hochschule Mittelhessen)

**Co-authors:** PENIRSCHKE, Andreas (Technische Hochschule Mittelhessen); DEGERSEM, Herbert (TU-Darmstadt); SINGH, Rahul (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI))

**Presenter:** KLAPROTH, Stephan (Technische Hochschule Mittelhessen)

**Session Classification:** Session 2: Beam Diagnostics

**Track Classification:** Beam diagnostics