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Status of the HITRAP Decelerator

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The HITRAP (Highly charged Ion TRAP) facility located at the GSI Helmholtzzentrum für Schwerionenforschung in Darmstadt provides the unique ability to decelerate heavy, accelerator-produced highly charged ions (HCI) down to 6 keV/nucleon and cool to eV equivalent temperature. A two-stage decelerator consisting of an interdigital H-type decelerator as well as a radio frequency quadrupole reduce the energy per nucleon from 4 MeV to 6 keV. After deceleration, the HCI are captured inside a Penning-Malmberg trap for sympathetic cooling using electrons.

We present the status of HITRAP. Results of the commissioning beamtime with $^{107}\text{Ag}^{45+}$ in 2025 are presented and difficulties are discussed. Lastly, the logistics of the recent experiment beamtime are discussed, during which HITRAP served an experiment with $^{197}\text{Au}^{79+}$ ions at 6 keV/nucleon.

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