

ACCELERATOR SEMINAR

Frank Herfurth

GSI Helmholtzzentrum für Schwerionenforschung GmbH

Thursday, 23rd November at 4 p.m.

KBW lecture hall

Planckstraße 1, 64291 Darmstadt

"Deceleration and storage of highly charged ions"

To perform precision experiments it is mandatory to provide means to link high-energy production schemes with low energy storage and measurement schemes. At GSI, heavy, highly charged ions up to bare uranium are produced in large quantities by stripping all electrons at a few 100 MeV/nucleon. For experiments in a low energy storage ring or in ion traps the beam needs to be decelerated efficiently, fast and maintaining the high charge state.

The first step is deceleration, accompanied by electron cooling, in the ESR. Then the beam is ejected to HITRAP or CRYRING@ESR. The linear decelerator HITRAP decelerates ions from 4 MeV/nucleon to 6 keV/nucleon to finally trap them in a Penning trap. The CRYRING@ESR is designed to store highly charged ions in the range from a few 100 keV up to 10 MeV/nucleon.



Coordinator: Manuel Heilmann

Secretary: Paola Lindenberg

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