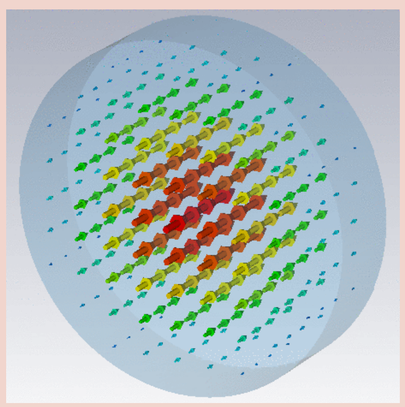
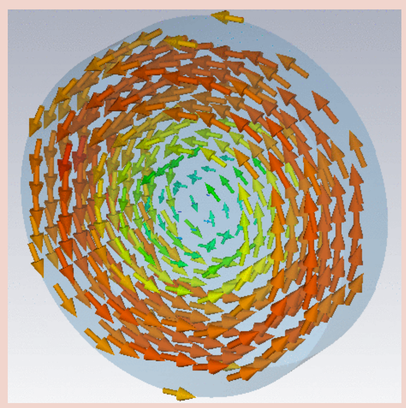
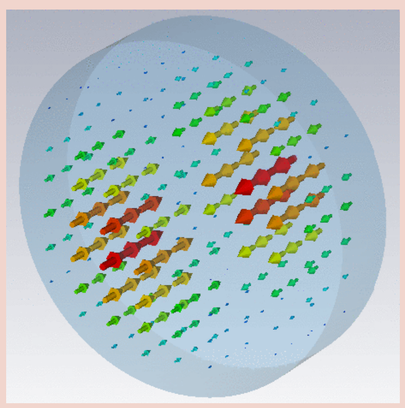
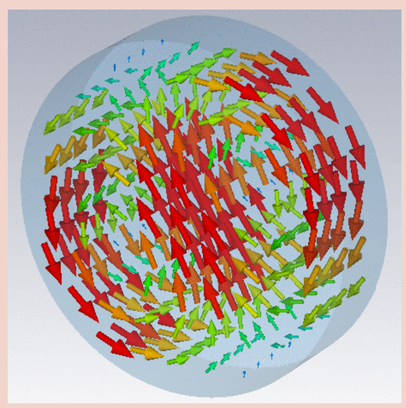
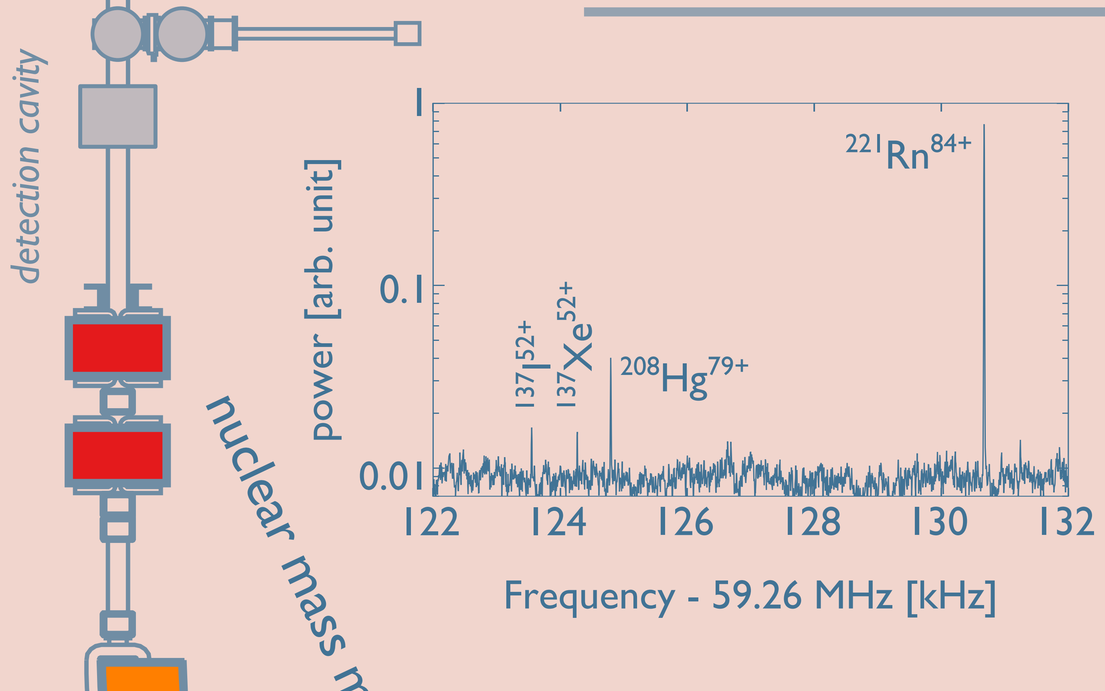
RF Cavities in Heavy-Ion Storage Rings for Nuclear Physics Experiments

X. Chen[1,2], M. S. Sanjari[1], *1. GSI, Germany 2. Uni. Heidelberg, Germany 3. MPIK, Germany*
Yu. A. Litvinov[1,3],
M. Steck[1]

A Radio Frequency (RF) cavity is a volume of space enclosed by conducting walls, where electromagnetic fields are trapped inside. RF cavities are commonly employed in accelerators to interact with charged particles mainly with their electric fields.

Depending on whether an external RF generator is involved, an RF cavity can either manipulate the beam (e.g. accelerating, deflecting, bunching) or detect the beam non-interceptively. For nuclear physics experiments, the cavity is used as a beam detector. In the case of heavy-ion storage rings, an RF cavity is able to resolve SINGLE particles.

	electric field	magnetic field
monopole mode		
dipole mode		



x.chen@gsi.de

This work was supported in part by the European Union under contract number PITN-GA-2011-289485