COVID-19, difficulties at preparation, malfunctions during beamtime or unreacted beam.

The first proton-capture experiment using highly-charged radioactive ion beam 15 shifts of beam time in middle March 2020 measurement of the $^{118}$Te(p, γ)$^{119}$I reaction

The simulated p-nuclei production yield to the solar abundance ratios has large deviations. The storage rings at GSI, the Experimental Storage Ring (ESR) and the Cryring, provide unrivaled opportunity allowing for the corresponding reaction studies. Access to nuclides which are hardly possible to prepare in form of a solid target.

Blocking the background

Possible improvements for signal-to-background ratio at low beam energies:
- separating (p, γ) products by blocking Rutherford channel
- make use of the energy resolution of the Si detector

Reaction studies in a heavy ion storage ring are realized through measurements in inverse kinematics.

The simulated $p$-nuclei production yield to the solar abundance ratios has large deviations. The storage rings at GSI, the Experimental Storage Ring (ESR) and the CRYRING, provide unrivaled opportunity allowing for the corresponding reaction studies. Access to nuclides which are hardly possible to prepare in form of a solid target.

Proton-capture events establish a narrow cluster of ions visible on the top of the smooth background of Rutherford scattering.

-35 rare p-nuclei: mainly γ-process [1], rp-process [2]

Pion detection in heavy ion physics: proton and pion detection with excellent proof-of-principle

When decreasing the interaction energy, the sensitivity for the p-capture products decreases drastically.

Possible improvements for signal-to-background ratio at low beam energies:
- separating (p, γ) products by blocking Rutherford channel
- make use of the energy resolution of the Si detector