Contribution ID: **237** Type: **Oral contribution**

Total Reaction Cross-Section Measurements in the Commissioning Experiment for R3B

Thursday 30 June 2022 12:40 (20 minutes)

The R^3B (Reactions with Relativistic Radioactive ion Beams) experiment at the research facility FAIR, currently under construction in Darmstadt, enables kinematically complete reaction studies for the most exotic nuclei.
The S444 commissioning experiment for R^3B, performed in the FAIR Phase-0 campaign in 2019, was the first operation of many new R^3B detectors in a common setup. With a stable ^{12}C beam and a set of different beam energies ranging from 400AMeV to 1AGeV we challenged this large acceptance installation around the GLAD magnet using the $^{12}C(p, 2p)^{11}B$ benchmark reaction.
During this successful commissioning we could measure the energy dependence of total reaction cross-sections of a ^{12}C beam on a ^{12}C target, which is poorly known for energies above 400AMeV. This is an important input for current calculations based on the eikonal reaction theory.
In my Talk I will present the current status and preliminary results of the analysis and discuss the technique and evaluated error budget for the different steps, also applicable for exotic nuclei in the future.
(supported by BMBF 05P19WOFN1, 05P21WOFN1 and the FAIR Phase-0 program)

Topic

Experiment

Author: PONNATH, Lukas

Co-authors: AUMANN, Thomas (T); GERNHÄUSER, Roman; JENEGGER, Tobias; KLENZE, Philipp

Presenter: PONNATH, Lukas

Session Classification: THU2