



# NUSTAR Seminar

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**Wednesday, Dec. 04, 2019 at 14:30 p.m.**

**Seminar Room Theory SB3.3.170a**

GSI, Planckstraße 1, 64291 Darmstadt

## **“A study of $\gamma$ -decay of the collective states in $^{208}\text{Pb}$ excited in (p,p') reaction at the CCB facility”**

In last few years, pilot experiments in the field of nuclear structure at the Cyclotron Centre Bronowice (CCB) facility in Krakow, Poland were performed. A medical cyclotron IBA Proteus C-235 located at CCB produces proton beams in the energy range of 70-230 MeV, that can be used for experimental purposes as well. In the presentation, the study of the  $\gamma$ -decay of collective states excited in inelastic proton scattering on the  $^{208}\text{Pb}$  target will be reported.

During the experiments, excitations in the energy region of the Giant Quadrupole and Dipole Resonances, as well as, the Pygmy Dipole States were observed. By applying different conditions on the data, spectra corresponding to  $\gamma$  decays of excited states to selected low-lying levels in  $^{208}\text{Pb}$  were obtained, allowing not only a look into  $\gamma$ -decay of the Giant Resonances but also into the Brink-Axel hypothesis.

In the course of the talk, experimental set-ups will be presented and methods of analysis will be discussed in detail. Obtained results will be shown along with the tentative interpretation.

Coordinator: Timo Dickel  
Secretary: Luise Dörsching-Steitz  
<https://indico.gsi.de/event/9715/>