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## One and two proton removal from neutron-rich nuclei: a comparative sensitivity study in the mass region of $^{52}\text{Ca}$

*Thursday, 27 June 2024 16:20 (20 minutes)*

One and two proton removal from neutron-rich medium-mass nuclei are commonly used to populate different final states in a nucleus of interest.  $(p,2p)$  and  $(p,3p)$  knockout reactions have been investigated in inverse kinematics within the first two SEASTAR campaigns that took place at RIBF in RIKEN, Japan [1]. These studies have been extended to the third SEASTAR campaign where medium-mass radioactive nuclei in the region of  $^{54}\text{Ca}$  were sent at about 270 MeV/nucleon onto a 15 cm long liquid hydrogen target surrounded by the MINOS time-projection chamber. MINOS enabled to track the angular distribution of the knocked out protons.  $(p,2p)$  and  $(p,3p)$  cross sections have been obtained and compared to theoretical reaction models. In particular, the difference in sensitivity of  $(p,2p)$  and  $(p,3p)$  to the population of individual final states in the same nucleus will be discussed.

References:

[1] A. Frotscher et al., Phys. Rev. Lett. 125, 012591 (2020)

### Collaboration

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