

Coulomb and Nuclear breakup of ${}^6\text{He}$

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We performed exclusive measurements of breakup reactions of ${}^6\text{He}$ into ${}^4\text{He}+2n$ on CH_2 , C, Sn, and Pb targets at 184 MeV/nucleon using the SAMURAI setup at the RI-beam factory (RIBF).

The highest-statistics experiments in these reactions owing to the combination of NeuLAND and NEBULA neutron detector arrays [1, 2] allowed us to study in detail these breakup reactions, the low-lying excited states, and their decays of neutron-halo nucleus ${}^6\text{He}$. In this presentation, the spectra of the excited state of ${}^6\text{He}$ and the inclusive cross-section for each reaction target will be discussed.

[1] T. Aumann et al., the R3B collaboration, R3B technical design report (2011).

[2] Y. Kondo et al., Nucl. Inst. and Meth. B 463 (2020) 173-178

Field of your work

Experimental nuclear physics

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