

# Analysis update on the low-energy dipole response of the halo nuclei ${}^6,8\text{He}$

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The heaviest bound helium isotopes  ${}^6\text{He}$  and  ${}^8\text{He}$  are 2- and 4-neutron halo nuclei with a clear alpha plus 2n and 4n structure. After electromagnetic excitation, they mainly decay via two- and four-neutron emission. In July 2017, the SAMURAI37 experiment was performed with the purpose of measuring the multi-neutron decay of  ${}^6\text{He}$  and  ${}^8\text{He}$  after heavy-ion-induced electromagnetic excitation in complete kinematics to study the dipole response of these nuclei.

The combination of the neutron detectors NEBULA and NeuLAND at the SAMURAI setup and the high beam intensities available at RIBF made this measurement possible for the first time. The experimental method is based on the measurement of the differential cross section via the invariant-mass method, which allows to extract the dipole strength distribution  $dB(E1)/dE$  and the photo-absorption cross section. To induce electromagnetic excitation reactions of  ${}^6\text{He}$  and  ${}^8\text{He}$  a lead target was used. Additionally a series of targets with increasing Z was used to get precise information about the nuclear contribution to the cross section.

In the talk the status of the ongoing analysis is shown.

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