

## Investigation of nuclear overlaps near the neutron dripline

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Direct reactions are known to provide access to crucial nuclear structure information e.g. the quantum overlap between the ground state wave function of an initial nucleus and the states populated by the reaction. The case of light nuclei is of particular interest as direct reaction experiments involving isotopes at the dripline can be implemented, providing access to the nuclear overlaps at the extreme of the chart. Moreover, the possibility to perform full ab initio calculation of overlaps and use those as nuclear structure inputs in reaction calculations may provide a stringent test of these models. I will present results focusing on the  $\langle \text{Li}|\text{Be} \rangle$  overlaps through the study of proton transfer reaction on neutron-rich Lithium isotopes. I will also introduce present investigations of clustering properties of light nuclei close to the neutron dripline using cluster knockout reactions. An experimental programme on the topic has just started at RIKEN/RIBF facility in Japan, accompanied by theoretical developments in reaction calculations [1]. In such experiments, multineutron systems, which represent a subject of interest in nowadays Nuclear Physics can also be investigated. Recent studies and outlooks on the topic will be briefly discussed.

[1] M.Lyu et al., Phys. Rev. C 97, 044612 (2018)

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