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Transfer and breakup reactions with halo nuclei: beyond inert core approximation

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Most theoretical calculations of direct reactions involving halo nuclei rely on a model of inert core + valence nucleons. However, the internal degrees of freedom of the core may play an important role in the reactions. For inelastic and transfer reactions this has been demonstrated recently in [1] using the framework of exact Faddeev-type equations. This study is being extended to breakup reactions in the intermediate-energy regime where recent measurements at GSI were performed. In addition to core excitation already included in [1] also the knockout of the nucleons from the core is studied. First results will be presented.

[1] A. Deltuva, Phys. Rev. C 88, 011601(R) (2013).

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