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# Examination of the adiabatic approximation for (d,p) reactions

Deuteron-induced one-neutron transfer reactions have been used to extract single-particle properties of nuclei, and the adiabatic (AD) approximation is often used to simply treat the deuteron breakup states.
We examine the validity of the AD approximation for describing the breakup process in the (d,p) reaction systematically.
We calculate the (d,p) cross sections with the continuum-discretized coupled-channels method (CDCC) for 128 reaction systems and compare the results with those obtained by the CDCC calculation with the AD approximation.

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