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Comparison of CDCC and Faddeev calculations for ^{11}Be -p scattering A.C. FONSECA, A. DELTUVA, Centro de Física Nuclear da Univ. de Lisboa, Portugal, A.M. MORO, Departamento de FAMN, Univ. de Sevilla, Spain, F.M. NUNES, NSCL and Dept. of Physics and Astronomy, Michigan State Univ., USA — The strong coupling between elastic and breakup channels in direct nuclear reactions involving halo type nuclei has lead to the development of CDCC calculations where an effective three-body problem is solved via the expansion of the full wave function in a selected set of continuum wave functions of a given pair subsystem Hamiltonian. Recent results [1] obtained with basis sets pertaining to two different pair subsystems lead to substantially different breakup cross sections. Given that the exact numerical solution of the Faddeev equations with two charged particles has recently become possible above three-body breakup threshold, we test CDCC by benchmarking calculations of the $p(^{11}\text{Be}, ^{10}\text{Be})pn$ breakup reaction with the corresponding exact solution of the Faddeev equations. The exact semi-inclusive cross section for the detection of ^{10}Be at different energies or angles reveals that each CDCC calculation is only appropriate to describe specific regions of phase space.

[1] A. M. Moro *et al.*, Nucl. Physics A**767**, 138 (2006).

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