A CDCC extension to microscopic three-cluster projectiles

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A microscopic version of the continuum discretized coupled channels method (CDCC) [1, 2] is applied to study the nuclear elastic scattering of projectiles constituted by three-clusters. The microscopic wave functions are based on effective nucleon-nucleon interactions and the Pauli principle is taken into account between and inside the clusters [3,4]. The projectile-target potentials are constructed from nucleon-target interactions, which are known to give very good descriptions of elastic scattering. Once those potentials are fixed, the model does not depend on any adjustable parameter. We show theoretical predictions for the elastic scattering of the ^{8}Li=α+t+n and ^{8}B=α+^{3}He+p projectiles compared with experimental data [6,7].

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