Microscopic description of eta-photoproduction on light nuclei

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Abstract

Coherent near-threshold photoproduction of eta-mesons off 3He and 3H nuclei is considered within a microscopic approach based on the Finite-Rank Approximation (FRA) of the nuclear hamiltonian with nuclear subsystem being treated within a rigorous few-body theory. A dependence of observables of the few-body photoproduction processes on the form of the two-body amplitudes N(eta, eta)N and N(gamma, eta)N is studied. A comparison with calculations based on the modified optical model is presented.