Three-nucleon interaction in light ion reactions\textsuperscript{1} GUILLAUME HUPIN, Lawrence Livermore National Laboratory, JOACHIM LANGHAMMER, Technische Universität Darmstadt, PETR NAVRATIL, TRIUMF, ROBERT ROTH, Technische Universität Darmstadt, SOFIA QUAGLIONI, Lawrence Livermore National Laboratory — The fundamental description of both structural properties and reactions of light-nuclei based on nucleon-nucleon and three-nucleon forces derived from first principles is a standing goal in nuclear physics. The \textit{ab initio} no-core shell model when combined with the resonating-group method (NCSM/RGM) [1,2] is capable of describing simultaneously both bound and scattering states in light nuclei, and has already produced promising results starting from a two-body Hamiltonian. Using similarity-renormalization-group evolved two- and three-nucleon interactions [2,3], I will present the first applications to light nuclei binary scattering processes when accounting for the chiral EFT two- plus three-nucleon interaction versus the chiral EFT two-nucleon interaction.

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