

Abstract Submitted
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No-Core Shell Model With Continuum Approach To α Clustering And α -induced Reactions.¹ KONSTANTINOS KRAVVARIS, SOFIA QUAGLIONI, Lawrence Livermore Natl Lab, PETR NAVRATIL, TRIUMF — Providing accurate predictions for reaction cross sections relevant in stellar fusion processes is one of the main goals of ab initio reaction theory. While a lot of successful predictions have already been made in lighter systems, the high many-body complexity encountered in the continuum limit has thus far limited applicability to reactions where the lightest nucleus consists of up to two nucleons. We will outline the basics of the no-core shell model with continuum and present a general method that allows dealing with α -induced reactions and the description of α clustering in a computationally efficient manner.

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