

Abstract Submitted  
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**Ab initio predictions for  $^{12}\text{C}$** <sup>1</sup> ANNA MCCOY, PETR NAVRATIL, TRIUMF — Obtaining accurate predictions of nuclear structure starting from the interaction between constituent protons and neutrons is a complex, computationally demanding problem, particularly for resonances and continuum states. The *ab initio* no-core shell model with continuum (NCSMC) explicitly builds in both short-range correlations as well as long-range clustering and collective dynamics necessary for accurately describing resonances and continuum states. We present predictions of, e.g., energies, phase shifts and capture cross sections, relevant for the  $p + ^{11}\text{B} \rightarrow ^{12}\text{C}$  reaction obtained using the NCSMC with interactions from chiral effective field theory as the only input.

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