

Abstract Submitted
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Electromagnetic response functions for open-shell nuclei from an ab initio symmetry-adapted framework¹ ROBERT BAKER, Ohio University, KRISTINA LAUNEY, Louisiana State University, NIR NEVO DINUR, TRIUMF, SONIA BACCA, Johannes Gutenberg-Universitat Mainz, JERRY DRAAYER, Louisiana State University, TOMAS DYTRYCH, Academy of Sciences of the Czech Republic — We will discuss work with the ab initio symmetry-adapted no-core shell model (SA-NCSM) and the Lanczos response function method to examine intermediate-mass, open-shell nuclei from a first-principle perspective. Using realistic interactions, the SA-NCSM can handle nuclei in ultra-large model spaces by employing symmetries previously shown to dominate the nuclear dynamics. The Lanczos response function method, when combined with the SA-NCSM, allows us to calculate response functions for nuclei and to study their intrinsic dynamics. With a focus on clustering and collectivity, we will present recent results for electromagnetic response functions, including for the open-shell nucleus ^{20}Ne , discuss the relevant physics, and briefly point to applications for nuclear compressibility.

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