

Abstract Submitted
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Ab initio treatment of fully open-shell medium-mass nuclei with the IM-SRG RAGNAR STROBERG, ANGELO CALCI, JASON HOLT, PETR NAVRATIL, TRIUMF, SCOTT BOGNER, HEIKO HERGERT, MSU / NSCL / FRIB, ROBERT ROTH, TU Darmstadt, ACHIM SCHWENK, TU Darmstadt / EMMI — The in-medium similarity renormalization group (IM-SRG) is a recently-developed theoretical many-body framework which – like the coupled cluster and the self-consistent Green’s function approaches – allows for the treatment of medium-mass nuclei using interactions fit at the few-body level. I will give a brief overview of how the IM-SRG may be used to decouple a shell-model type valence space. I will then describe a recent development for the approximate treatment of residual 3N forces in the valence space which extends the reach of IM-SRG to essentially all medium-mass nuclei, and I will present some selected results spanning isotopic chains from beryllium ($Z=4$) to nickel ($Z=28$). Finally, I will discuss the consistent treatment of transition operators, highlighting the potential for future applications in electroweak physics.

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