APR21-2021-020020

Abstract for an Invited Paper for the APR21 Meeting of the American Physical Society

Nuclear structure and thermodynamics from lattice effective field theory¹

DEAN LEE, Michigan State University

I discuss recent progress in calculations of nuclear structure and thermodynamics using chiral effective field theory on the lattice. The talk begins with an introduction covering how nuclear forces are represented on a lattice and how large-scale simulations are done. It then describes calculations of the phase diagram of symmetric nuclear matter and the structure of light and medium-mass nuclei. The talk will feature several new algorithms and methods that make these calculations possible.

¹U.S. Department of Energy DE-SC0018638, Jlich Supercomputing Centre, Oak Ridge Leadership Computing Facility