

**Title:**

Have we finally cracked the nuclear force problem?

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**Abstract:**

In the past decade, there has been substantial progress in the derivation of nuclear forces from chiral effective field theory (EFT). Accurate two-nucleon forces have been constructed at next-to-next-to-next-to-leading order (N<sup>3</sup>LO) and applied (together with three-nucleon forces at N<sup>2</sup>LO) to nuclear few- and many-body systems---with a good deal of success. This may suggest that the 80-year old nuclear force problem has finally been cracked. Not so! Some pretty basic issues are still unresolved. In my talk, I will mainly focus on the two most pressing ones, namely, the proper renormalization of the two-nucleon potential and sub-leading many-body forces.