

Recent advances and current status of chiral nuclear forces

During the past two decades, chiral effective field theory has evolved into a powerful tool to derive nuclear two- and many-body forces in a systematic and model-independent way. Nowadays, most ab initio calculations of nuclear structure and reactions (including, in particular, exotic nuclei) are conducted with chiral forces. Therefore, it is of interest to have an overview of the status in the field. Thus, after providing some background, I will summarize the state of the art in the construction of high-quality chiral two-nucleon forces. Furthermore, I will also elaborate on the derivation and application of chiral three-nucleon forces, indispensable for any meaningful microscopic calculation.

Summary

Primary author(s) : MACHLEIDT, Ruprecht (University of Idaho)

Presenter(s) : MACHLEIDT, Ruprecht (University of Idaho)