
Speaker:	Prof. Dr. Renato Higa
Title:	Nuclear structure and reactions with Halo-EFT
Date:	11 October 2016
Time:	14:00
Place:	Lorentz room

Abstract

Nuclear forces from QCD is a research line with a great amount of progress, however, how they predict the formation and structure of nuclei still spurs many open and challenging questions. Chiral EFT interactions merged with state of the art ab-initio methods can handle most of the stable light and mid-mass nuclei, but has limitations to handle mostly unknown, rare exotic nuclei. The latter often exhibit a diffuse, weakly-bound structure with a cluster configuration that has important implications in many astrophysical processes. The hard-binding of each cluster and the soft-binding of the exotic, halo nucleus provide a separation of scales suitable for the so-called Halo-EFT. In this talk I will discuss the essential physics captured by Halo-EFT, its pros and cons compared to other methods, and present a few processes where this formalism has been applied.