Contribution ID : **151** Type : **Oral contribution**

New interactions in Coherent Elastic Neutrino-nucleus Scattering measurements

Thursday, 9 July 2020 15:25 (0:17)

Content

The first observations of coherent elastic neutrino-nucleus scattering (CEvNS) were made by the COHERENT collaboration, using CsI (2017) and liguid argon (2020) detectors. Since then, a significant number of new experiments are planned to observe this elusive process using different nuclei.

In this talk, we will discuss the Standard Model physics that can be extracted from this process, along with some searches of New Physics that have been extensively studied, such as the so called Nonstandard Neutrino Interactions (NSI). To explain NSI, we have proposed a model with a new light gauge Z' boson that couples differently with each flavor. In order to constrain this model, we used COHERENT data, as well as future upgrades consisting of LAr, Ge, and NaI detectors. We found that this model leads to four different phenomenological viable scenarios, with different predictions in the neutrino sector as well as different cross sections for CEvNS.

Primary author(s) : Dr. FLORES, Luis (IFUNAM)

Co-author(s) : Mr. NATH, Newton (Research Scholar); PEINADO, Eduardo (Instituto de Fisica UNAM)

Presenter(s) : Dr. FLORES, Luis (IFUNAM)

Session Classification : Afternoon session 1

Track Classification : Contributed talks