



Contribution ID: 28

Type: **not specified**

The PTOLEMY project: from an idea to a real experiment for detecting the Cosmological Relic Neutrinos

The first part the seminar will be about a novel idea for the detection Cosmological Relic Neutrinos (CRN) and more in general, for the detection of neutrinos of vanishing energy. This idea is described in detail in the paper [1]. The method is based on the fact that neutrino interactions on beta-unstable nuclei have the key feature of requiring no energy threshold for the neutrino interaction. Some phenomenological aspects will be presented.

The second part of the seminar will be dedicated to the PTOLEMY project, in a starting phase at the Laboratori Nazionali del Gran Sasso. In this project we aim at demonstrating the detection principle of the CRN and finalize the design of the future full scale experiment. The technologies on which the detector concept is based will be presented and the key features explained.

[1] A. Cocco, G. Mangano and M. Messina, "Probing Low Energy Neutrino Backgrounds with Neutrino Capture on Beta Decaying Nuclei,"

Journal of Cosmological and Astroparticle Physics 0706 15 (2007).

Primary author: Dr MESSINA, Marcello (NYU Abu Dhabi)

Presenter: Dr MESSINA, Marcello (NYU Abu Dhabi)