



**20<sup>th</sup> July 2017 - 13:00**  
Building 99, Seminar Room IV (1. OG)

---

**Pedro de la Torre Luque**  
*Universidad de Granada, Spain*

## **Study of cosmic neutrinos diffuse flux with Antares neutrino telescope: track channel**

This project is based on the study of signals which ANTARES neutrino telescope have detected between 2007 and 2015. Firstly, an introduction about the sources of neutrinos and what we know about the origins of cosmic neutrinos is showed. Then, It will be explained the process of detection of neutrinos used by ANTARES neutrino telescope.

Secondly, the analysis of the detected data in the 9 years mentioned before is carried out. The first part of the analysis consists in a comparison between detected data and simulated data will be shown for some variables, like neutrino direction or energy of them.

The Monte Carlo simulated data is done in order to reproduce the observed Background and reduce it by applying cut-offs. Also the simulation of the expected signals from cosmic neutrinos is done to compare to the fitted background.

The second part consists in the search of the cut-offs which will help to improve the signal/noise ratio. These cut-offs will be selected by mean of the analysis of some parameters or applying statistical methods, like Feldmann-Cousin method.

Finally, the obtained signal is showed to extract conclusions.

Host: Melanie Schnell - CFEL Molecular Physics seminar