

**CENTRE D'ETUDES NUCLÉAIRES DE
BORDEAUX-GRADIGNAN**

Vendredi 4 Mars 2016

à

11H

Un café sera servi à partir de 10h45

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**High precision ray tracing simulation
for Mediterranean neutrino telescopes**

The neutrino has a very important role in the multimessenger astronomy. This kind of astronomy allow to study the Universe energetic events and objects, but also the neutrino itself. In recent years, larges underwater and under-ice telescopes have been designed to allow the detection of high energy neutrinos.

After the successful proof of concept done by ANTARES, the KM3NeT detector was proposed, to be deployed in Italy (Sicily) and in France (Toulon). The full telescope is divided in two apparatus, one dedicated to the high neutrino detection (ARCA, Italy), and a second to the low energy and the characterization of the neutrino (ORCA, France).

In this project the simulation has an essential role to play in the evaluation of the performances, by evaluating the signal detection efficiency and the background contribution.

After a presentation of the current status of the Mediterranean neutrino telescopes ANTARES and KM3NeT, the simulation will be described, with a particular attention on the high precision ray tracing simulation used as a first stone to the full detector simulation.

Salle des Séminaires du CENBG

Le Haut Vigneau - BP 120 - F-33175 Gradignan Cedex