

# ICEHAP Seminar

Nov. 2, Wednesday, 2pm, 2015

place: Fac. of Sci. Bldg 2, 3F, room No.308

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(APC, Paris)

## **"Neutrino astronomy and oscillation research in the abysses: ANTARES and KM3NeT"**

### **abstract**

Efforts to exploit the waters of the Mediterranean Sea for neutrino astronomy have been ongoing for about two decades. The ANTARES experiment, installed near Toulon (France) and running since 2008 in its final configuration, has demonstrated that a nanosecond precision timing combined with the good optical properties of sea water can lead to high-precision all-flavour neutrino astronomy. Recent results from ANTARES will be presented with a focus on its complementarity with the IceCube detector.

The next-generation experiment in the Mediterranean, KM3NeT, is currently under construction on two sites in the Mediterranean (one in France and one in Italy). KM3NeT will pursue a twofold physics program using two detectors with the same technology but different layouts: ORCA, optimised for measuring atmospheric neutrino oscillation parameters (and in particular the neutrino mass hierarchy) in the few-GeV range; and ARCA, for studying astrophysical neutrinos at higher energies. The status of KM3NeT will be summarised and the resulting prospects for ORCA and ARCA discussed.