CERN Colloquium

SPEAKER: Dr. Licia Verde (ICC - Universidad de Barcelona ES)

TITLE: **Neutrino properties from cosmology**

DATE: Thu 21/02/2013 16:30

PLACE: Main Auditorium

ABSTRACT

In the past few years there have been new developments in the effort of constraining neutrino properties with cosmology, both concerning new data sets with associated observational constraints, and new theoretical results.On the data side, the Cosmic Microwave Background angular power spectrum damping tail has been accurately measured by ground-based experiments.

Large-scale structure surveys have mapped cosmological structures in the Universe over unprecedentedly large volume.
Future, massive large-scale structure survey have been presented and approved.On the theory side, a significant effort has bene devoted to achieve better modeling of small scale clustering that is of cosmological non-linearities.

As a result it has become clear that forthcoming cosmological data have enough statitsical power to detect the effect of non-zero neutrino mass (even at the lower mass scale limit imposed by oscillations) and to constrain the absolute neutrino mass scale.Cosmological data can also constrain the number of neutrino families.
Finally, a new possibility has emerged of constraining the neutrino mass hierarchy with cosmology.

Organised by: Ignatios Antoniadis/PH-TH .....**Tea and coffee will be served at 16h00**