

**Title:** Astroparticle Physics

**Lecturer:** Dr Nathalie Palanque-Delabrouille

**Date and Times:**

- 15<sup>th</sup> July at 10:15
- 16<sup>th</sup> July at 9:15
- 16<sup>th</sup> July at 10:15

**Summary of the proposed talk:**

The lectures cover recent topics in astroparticle physics. After a general introduction to the field, the first lecture will explain the origin of the elements in the universe (Big Bang Nucleosynthesis) and will present the studies of the cosmic microwave background and of its anisotropies. The next lecture will cover the ongoing experiments dedicated to the study of dark matter (direct detection or microlensing experiments) and dark energy (in particular the experiments searching for supernovae). The last lecture will be devoted to high energy astrophysics, large scale cosmic ray detectors and high energy neutrino detectors.

**Prerequisite knowledge and references:**

Basic knowledge of physics and astrophysics

**Biography-  
Brief CV:**

Since 1997 - Physicist at CEA Saclay, department of Particle Physics

(1994-2003): baryonic dark matter EROS experiment

(Since 1998): neutrino astrophysics ANTARES experiment

(Since 2003): cosmology and dark energy SNLS experiment

1997 - PhD from University of Chicago and Doctorat Université Paris 7, with

Congratulations of the Jury, Award "Jeunes Chercheurs" Saint GOBAIN of the French Society of Physics

1994 - Master of Science, The University of Chicago, USA Award "Excellence in Teaching of Undergraduates", University of Chicago, USA

1992 - Engineer diploma, Télécom PARIS, France DEA of electronics, Université Paris 6, France, with honors