Université Paris-Saclay
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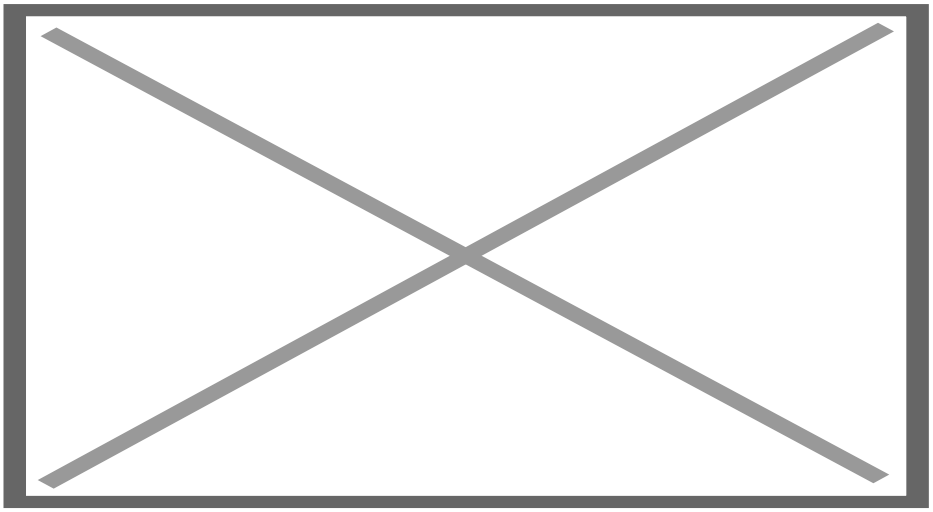
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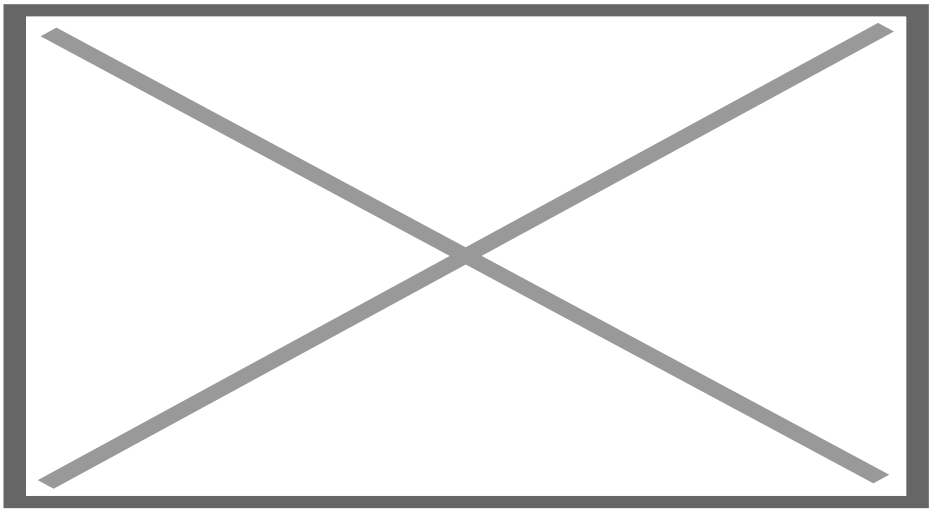
M2 Nuclei, Particles, Astroparticles and Cosmology

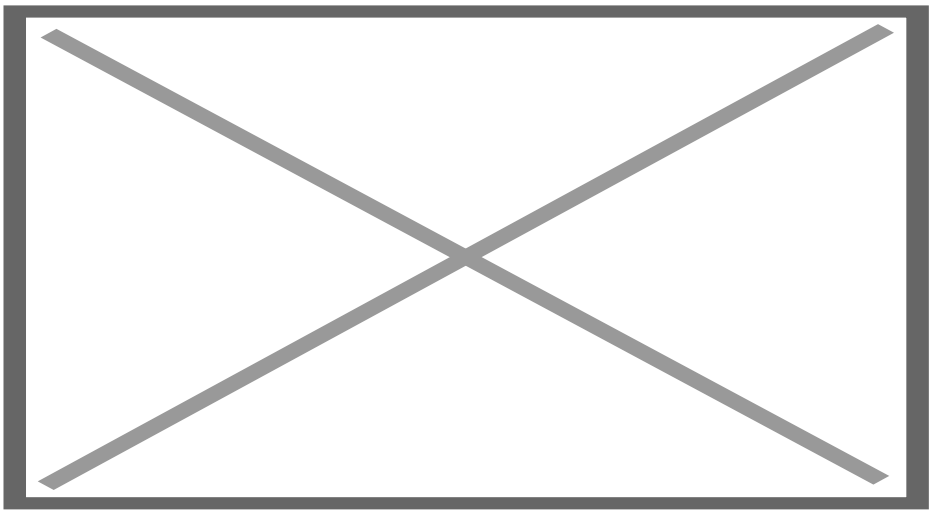
Master's degree
Specialisation Physique fondamentale et applications
Enrolment type
Formation initiale
Language(s) of instruction
English

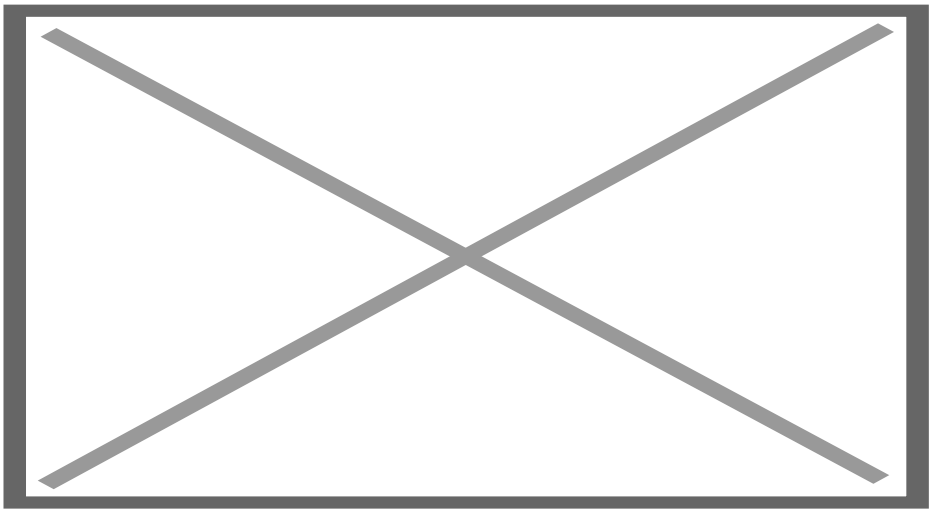
The programme allows each student to gradually build their career path, starting with a general core curriculum (September-November) that teaches the basics of plasma physics. A specialisation (December-January), followed by an on-site specialisation (February-March), are then offered. The year ends with a 4- to 5-month internship in France or abroad.

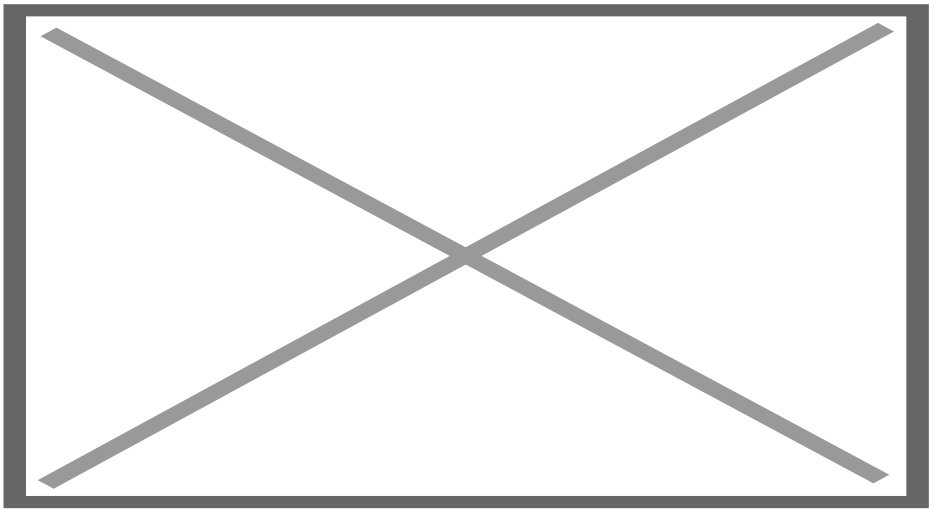
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Information

- Overview
- Application requirements
- Schedule

Présentation

Objectives

The Master's degree M2 NPAC is intended for students training towards research in nuclear physics, particle physics, astroparticles and cosmology. It seeks to prepare students for an experimental or phenomenologicall PhD in the main research centres such as the CNRS, the Universities or the CEA. This training is designed to provide students with the fundamental knowledge in the world of the infinitely large (cosmology and astroparticles) and the infinitely small (particle and nuclear physics).The Master 2 NPAC trains the future researchers of tomorrow. One of NPAC main assets is its strong link with research. All the teachers are leading-edge researchers in their domain. The students work in laboratories, during their internships and also when studying a selected researchers' work, particularly in instrumentation. Indeed, these areas of research require increasingly powerful and sophisticated instruments, their performances determining the advances of the discipline. The Master 2 NPAC program thus includes lectures in both the detector physics and the accelerator physics fields. This training is recognized for its academic quality by the research laboratories in the Paris region, and all over France. NPAC students are also welcome in theoretical and astrophysics laboratories. After the NPAC 1-year training, about 90% of the students obtain a grant to begin a PhD thesis. Most of the hosting laboratories are in Paris area, but also elsewhere in France or abroad.

Admission

Capacity

Available Places

15

Target Audience and Entry Requirements

Quantum Mechanics Notions of Subatomic Physics Classical Electrodynamics

Période(s) de candidature

Inception Platform

From 01/03/2026 to 30/06/2026

Supporting documents

Compulsory supporting documents

Motivation letter.

All transcripts of the years / semesters validated since the high school diploma at the date of application.

Certificate of English level.

Curriculum Vitae.

Recommendation letters.

Selection sheet completed.

Details of the UEs taken for candidates outside the M1 Paris Saclay.

Additional supporting documents

Certificate of English level (compulsory for non-English speakers).

Detailed description and hourly volume of courses taken since the beginning of the university program.

VAP file (obligatory for all persons requesting a valuation of the assets to enter the diploma).

Document indicating the list of local M2 choices available here : https://urlz.fr/i3Lo.

Supporting documents :
- Residence permit stating the country of residence of the first country
- Or receipt of request stating the country of first asylum
- Or document from the UNHCR granting refugee status
- Or receipt of refugee status request delivered in France
- Or residence permit stating the refugee status delivered in France
- Or document stating subsidiary protection in France or abroad
- Or document stating temporary protection in France or abroad.

Programme

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	dis le c
Physique des Détecteurs	3	Semestre 1	30						
Charger le détail									
Data Science	3	Semestre 1	0		45				
Charger le détail									
Projet Expérimental	6	Semestre 1			50				
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	c
Physique des Particules	9	Semestre 1	90						
Charger le détail									
Physique Nucléaire	9	Semestre 1	90						
Charger le détail									
Astroparticules et Cosmologie	9	Semestre 1	90						
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	distan learni cours
Stage	24	Semestre 2							
Charger le détail									

Subjects	ECTS	Semester	Lecture	directed study	practical class	Lecture/directed study	Lecture/practical class	directed study/practical class	c

Parcours Thématique Sem 2 (1 UE au choix parmi 3)

Physique des Particules Complément	3	Semestre 2	30
Charger le détail			
Physique Nucléaire Complément	3	Semestre 2	30
Charger le détail			
Astroparticules et Cosmologie Complément	3	Semestre 2	30
Charger le détail			

Cours Avancés (1 au choix parmi 5)

Advanced Astroparticles	3	Semestre 2	30
Charger le détail			
Physics Beyond the Standard Model	3	Semestre 2	30
Charger le détail			
Advanced Cosmology	3	Semestre 2	30
Charger le détail			
Quarks Gluons Hadrons Nuclei and Beyond Nuclear Structure	3	Semestre 2	30
Charger le détail			
Neutrino and Dark Matter Physics	3	Semestre 2	30
Charger le détail			

Teaching Location(s)

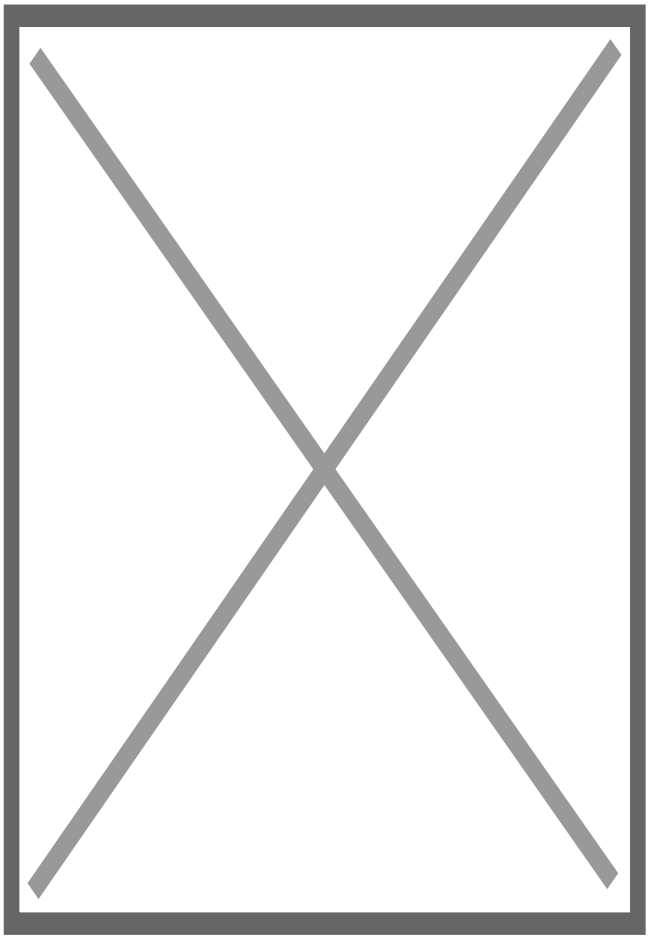
ORSAY
PARIS 15

Academic Partner(s)

SU, UPC

Training campus

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Voir
Library
Community center

Contact

- **Fabien CAVALIER**
- **Jonathan BITEAU**

http://www.universite-paris-saclay.fr/formation/master/physique-fondamentale-et-applications/m2-nuclei-particles-astroparticles-and-cosmology