Lascala – Erasmus mundus master

https://master-lascala.eu/

SAPIENZA
UNIVERSITÀ DI ROMA

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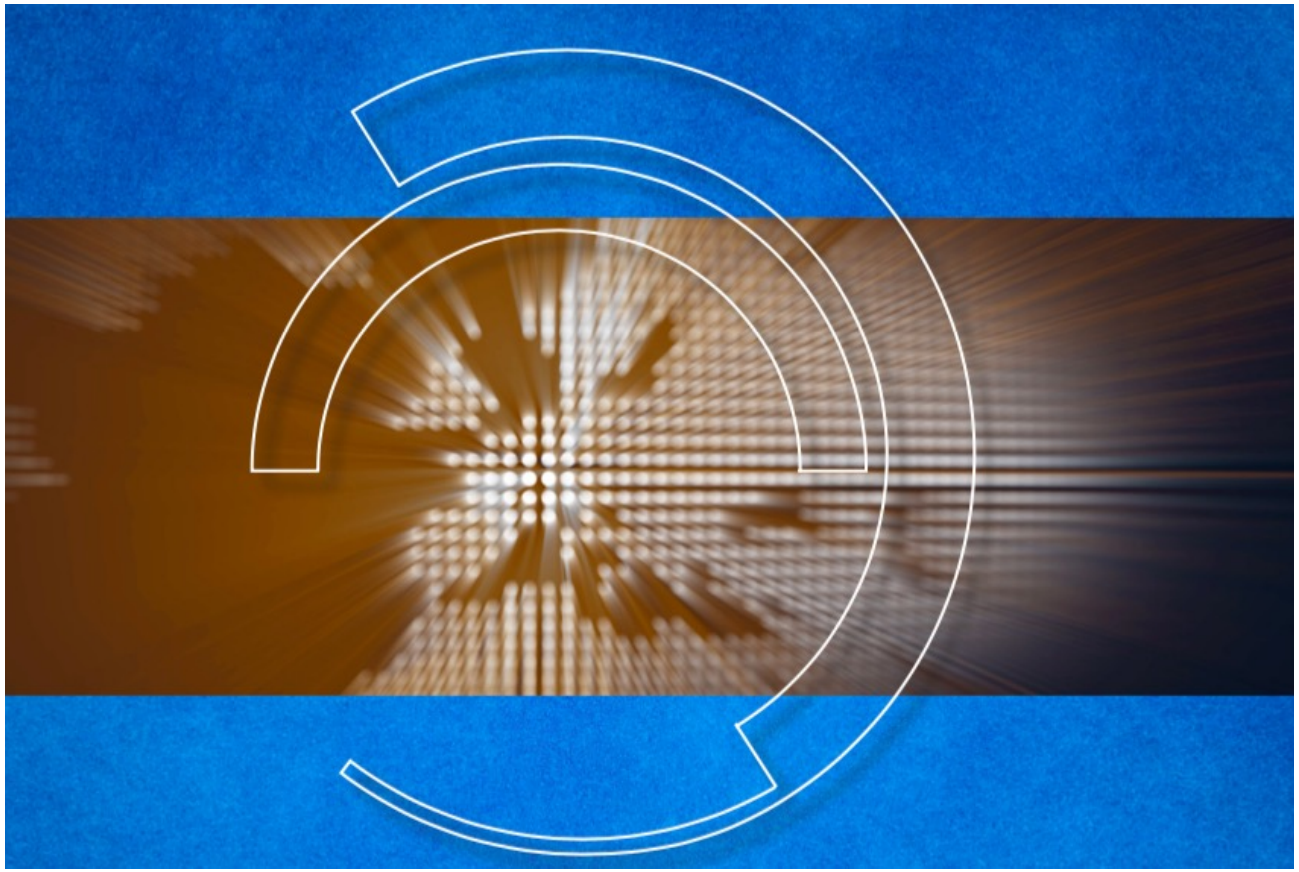

European Strategy for Future Accelerators

A long journey to the Future Circular Collider

Requires an entire generation of experts

3 feb 2022

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Environmental and societal impact

B. Particle physics, with its fundamental questions and technological innovations, attracts bright young minds. Their education and training are crucial for the needs of the field and of society at large. ***For early-career researchers to thrive, the particle physics community should place strong emphasis on their supervision and training.***

Emphasis on the education and the career of young students.

Erasmus Mundus

- An Erasmus Mundus Joint Master Degree (**EMJMD**) is an integrated, international study programme, **jointly** delivered by an international **consortium** of higher education institutions.
- EMJMDs award EU-funded **scholarships** to the best student candidates applying under annual **selection** rounds.
- Students at Master's level worldwide can apply.
- A programme up to 24 months and to 120 ECTS.
- **At least two degrees** are issued.
- Final aim is to create a *new* type of master degree

Lascala : Large scala accelerator and laser

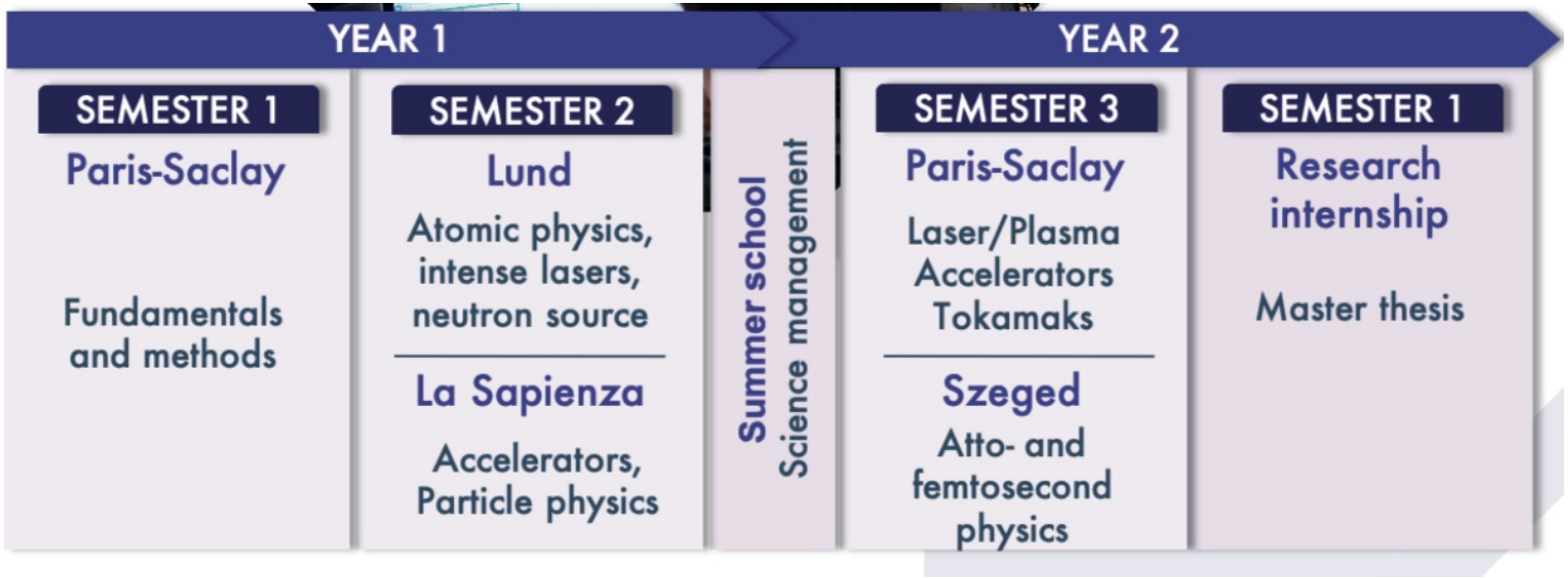
université PARIS-SACLAY · SAPIENZA UNIVERSITÀ DI ROMA · SZTE UNIVERSITY OF SZEGED · LUND UNIVERSITY

Lascala
Erasmus Mundus Master

- To grow **experts** in accelerators, high power lasers and associated advanced sources.
- Training includes **laboratories** and hands-on activity in large scala facilities (Paris research area, INFN LNF, …).
- Summer/winter school to foster students enterpreneurial skills.
- Contact with SME and research and innovation centers.

Coordinated by Paris-Saclay.

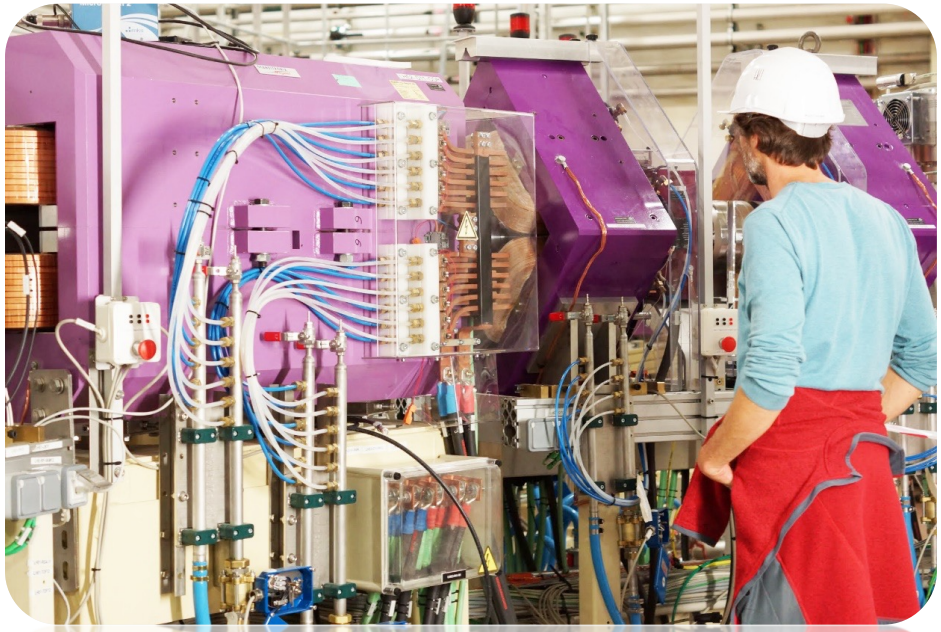
Mobility of students



- Two possibile paths (Saclay-Sapienza-Saclay) or (Saclay-Lund-Szeged)
- Naturally connected to our Particle & Astroparticle Physics CV (and our Ph.D. school in Accelerator Physics)
- First path: more emphasis on particle physics and accelerators.

Collaborations

- Access to **CERN**, **ITER** (Cadarache), **Soleil** synchrotron, **ELI** (Hungary), **LNF** (Italy).
- Partrner **Princeton Univ** (USA), **Weizmann Inst** (Israel), **Applied Physics Russian academy of Science**
- Summer school in Genoa (IT)



Courses at Sapienza for Lascala students

Compulsory courses (21 ECTS):

- Physics laboratory II *(9 ECTS)*
  In collaboration with INFN LNF Divisione Acceleratori
- Particle Physics (6)
- Detectors and accelerators in particle physics *(6).*

Two optional courses to be chosen (12 ECTS):

- Methods in experimental particle physics *(6)*
- Medical Applications of Physics (6)
- Plasma physics and Nuclear Fusion *(6) - LM-30*
- Optics *(6) - LM-29*
- Laser fundamentals (6) – *LM-29*

Examples: courses to be attended at Saclay

LASCALA (Saclay)	ECTS
Particles, Nuclei & Universe	8
Atoms, Molecules, Optics	5
Solid State Physics	8
Experience in laboratories (large scale facilities at Paris-Saclay)	6
- Mathematics and statistical methods to the big data processing - Numerical methods	3+3
- Practical on large scale facilities at Paris-Saclay - 8 days - Management of large scale installations	4+2
- European history of science and its role on building EU values - Transverse high technologies: high vacuum, cryogeny, superconductivity	3+3
Winter school + summer school	8+5
Thesis Project	

It's your time !

- **Opportunity** to be part of a group of motivated **international** students
  - About 20 (rich!) fellowship per year.

- First academic year for Lascala has just started.

- Call for application for next academic year (2022-2023) is now open (closes Feb 28th)
- Results known at beginning of April.
  - You must hold a bachelor in Physics at the time you will enrol (Sep 2023)
  - A caveat for EU student: no fellowship for the semester in your home country…

- Here in Roma Lascala students will be associated to *Particle & astroparticles*