New Enigmass+ PhD and postdocs

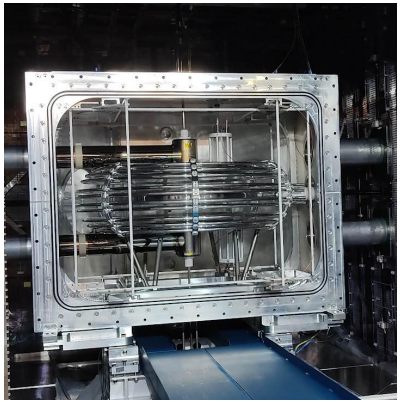
1-2 slides (3 min) each to introduce yourself and your project

Morgan Ferry
1st year PhD student at LPSC

Academic background : Master's degree in Subatomic Physics & Cosmology at UGA

PhD subject : **Search of the neutron Electric Dipole Moment (nEDM)**

- *What is nEDM ?*
  - Spin-Electric field interaction
  - Current limit : $d_n = (0 \pm 1.1_{stat} \pm 0.2_{sys}) \times 10^{-26}\ e\ \mathrm{cm}$ (nEDM Collab, 2020)
  - Precision experiment
  - Ultra Cold neutrons (storable)
  - CP violating interaction



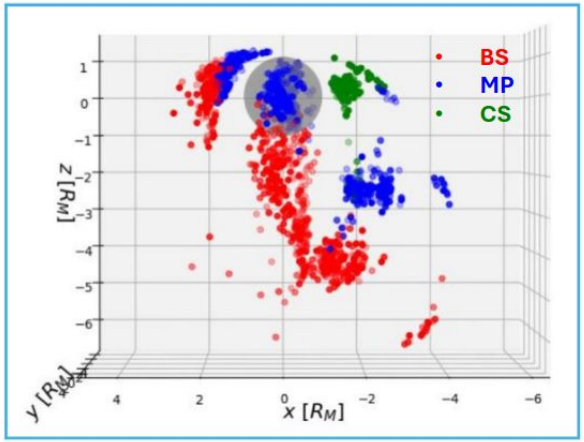
- *PhD main objectives :*
  - **n2EDM** experiment at Paul Scherrer Institut (PSI) in Switzerland
    - Measure of **neutron gyromagnetic ratio**
    - Spin precession of neutrons in a magnetic field
    - Magnetic field measurement with optical reading of ^{199}Hg atomic vapour
  - **L4M** experiment at LPSC
    - Measure of the **^{199}Hg gyromagnetic ratio**
    - Magnetic field measurement with ^{3}He

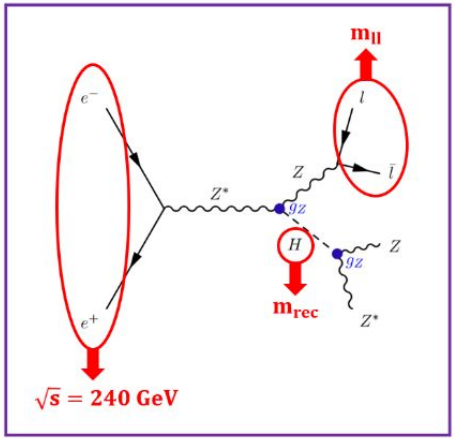
Hind Taibi
1st-year PhD student at LAPP - ATLAS

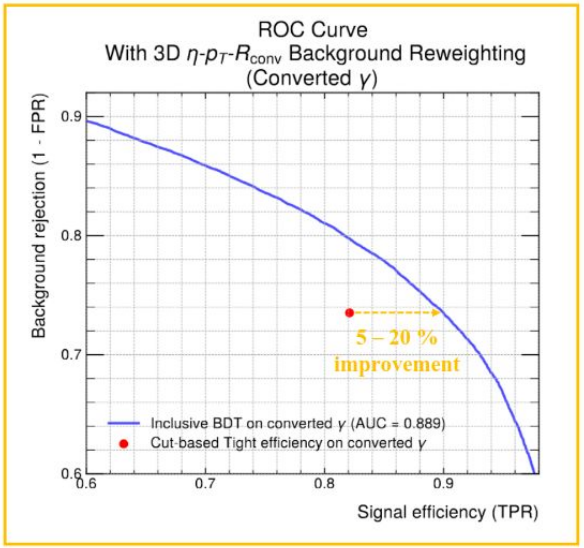
Academic Background

I did both of my bachelor (in fundamental physics) and masters (in particle physics) at Université Paris-Saclay.

I did both of my bachelor and masters at Université Paris-Saclay and 3 internships:
- L3 internship at LIRA, on the **reconstruction of Mercury's magnetosphere**,
- M1 internship at LAPP, on **FCC-ee preliminary analysis**,
- M2 internship at LAPP, on **photon ID optimization**.







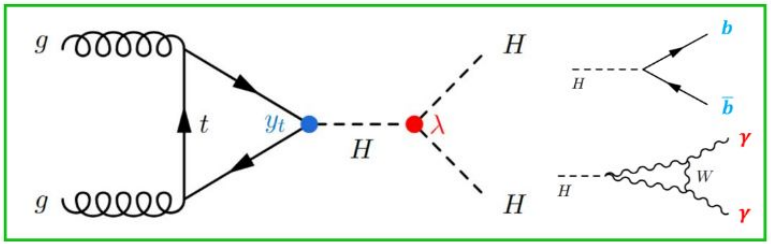
Hind Taibi
1st-year PhD student at LAPP - ATLAS

PhD

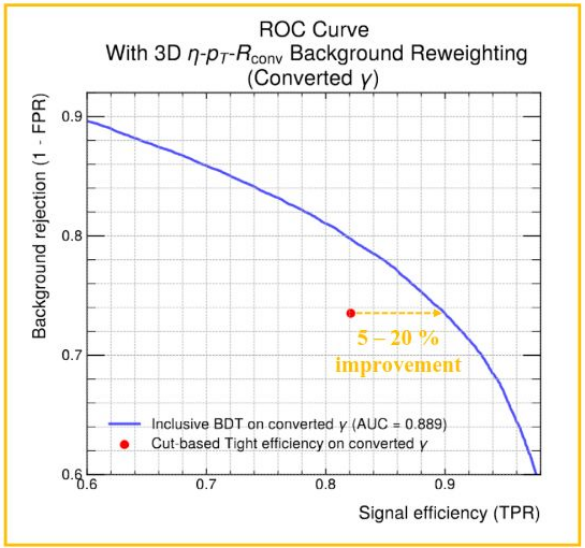
During my PhD, I will be working on:

- **Photon identification optimization** using machine learning,
- The next $\boldsymbol{HH \rightarrow bb\gamma\gamma}$ analysis.

Under the supervision of Marco Delmastro.



$$\Rightarrow \mathcal{L}^{\mathrm{SM}} \supset V(\boldsymbol{\Phi}) = V_0 - \frac{m_H^2}{2} h^2 + \boldsymbol{\lambda_{HHH}^{SM}} \boldsymbol{h^3} + \lambda_{HHHH}^{SM} h^4$$



Dr. Émilie Parent

Juan de la Cierva Postdoctoral Fellow
Institute of Space Sciences (ICE-CSIC), Barcelona

IPAG

Will be joining SHERPAS team with **Maica Clavel**
@IPAG early January 2026
Project: Galactic bulge population of MSPs

Research Expertise

Field: Neutron star astrophysics — with a focus on **time-domain, software development, pulsar searching, timing**

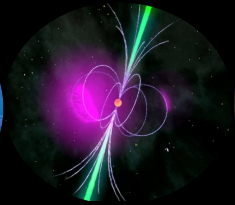
Multiwavelength observations: radio, X-rays, ɣ-rays

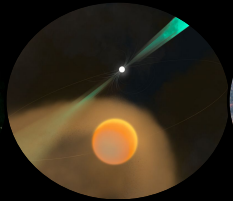
Facilities: Arecibo, GBT, FAST, Lovell, CHIME, XMM-Newton, NICER, Swift, eROSITA, Einstein-Probe, Fermi-LAT

PhD in Physics (McGill University, 2017–2021)

Supervisor: Vicky Kaspi

- Specialized in large-scale **radio pulsar and fast transient surveys (key collaborations: PALFA (Arecibo), GBNCC (Green Bank)**
- Development and operation of **search pipelines (HPC)**
- **Discovery and timing of dozens of radio pulsars & MSPs**, including ɣ-ray emitters
- **Observational biases (particularly for MSPs and binaries)** & impact on Galactic pulsar population models
- **Fast Radio Bursts**





Current Research

Nanda Rea's group @ ICE-CSIC (2021–present)

- **X-ray pulsar search pipeline**
  - Developing a **systematic X-ray search pipeline** for neutron stars using archival data
  - Aims to uncover **new X-ray pulsars** and map the **Galactic X-ray NS population**
- **Deep radio searches for accreting and transitional MSPs**
  - Study systems bridging accretion and rotation-powered phases
  - Targets include **AMXPs** and **tMSPs**, probing **MSP formation and recycling**
- **Pulsar-based autonomous space navigation**
  - Applying **MSP timing precision** to spacecraft navigation (PODIUM/DeepSpacePULSE)
- **Binary MSP timing**
  - Relativistic double-NS systems