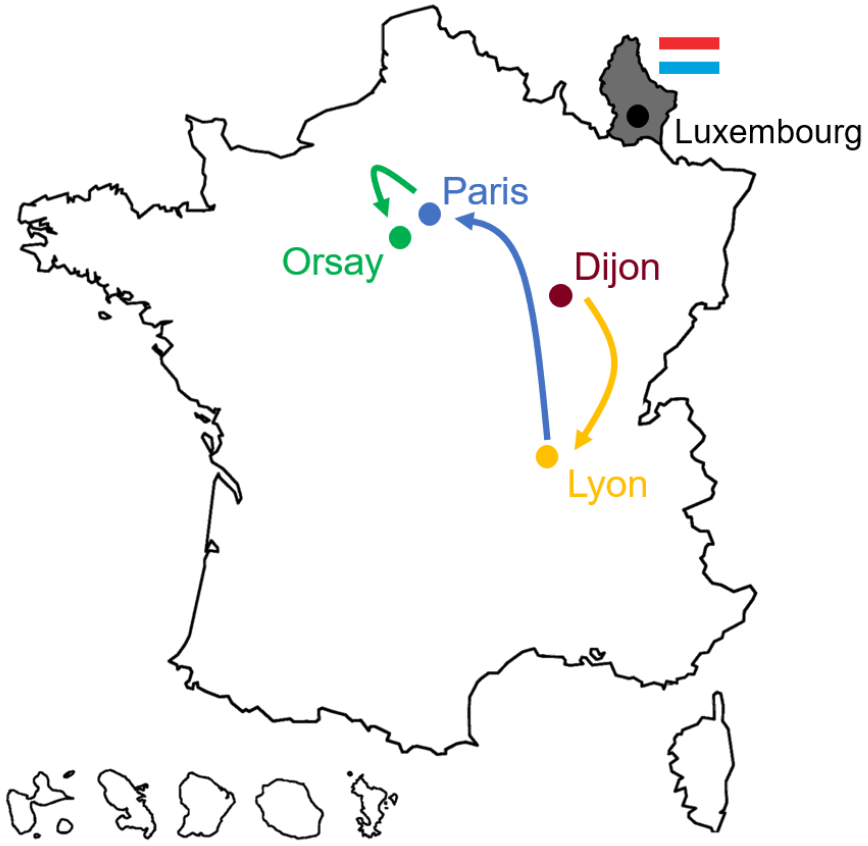
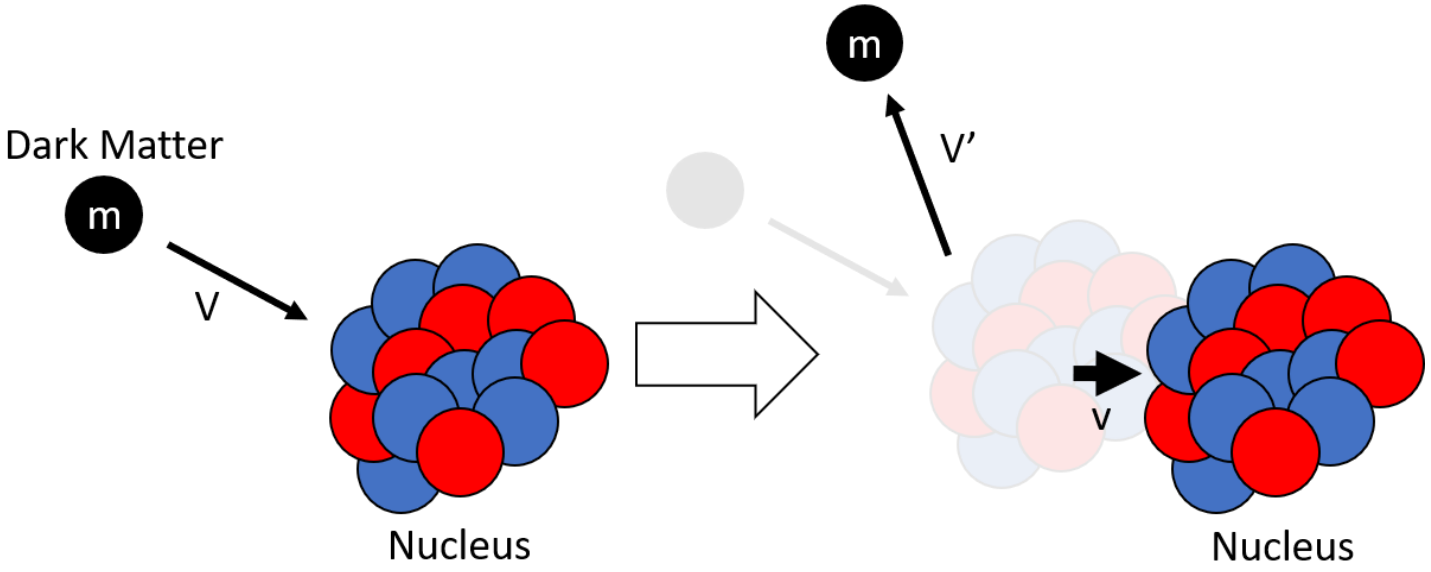
Alec Cochard

A2C/Astroparticles, Solid-State Detectors (ASSD)



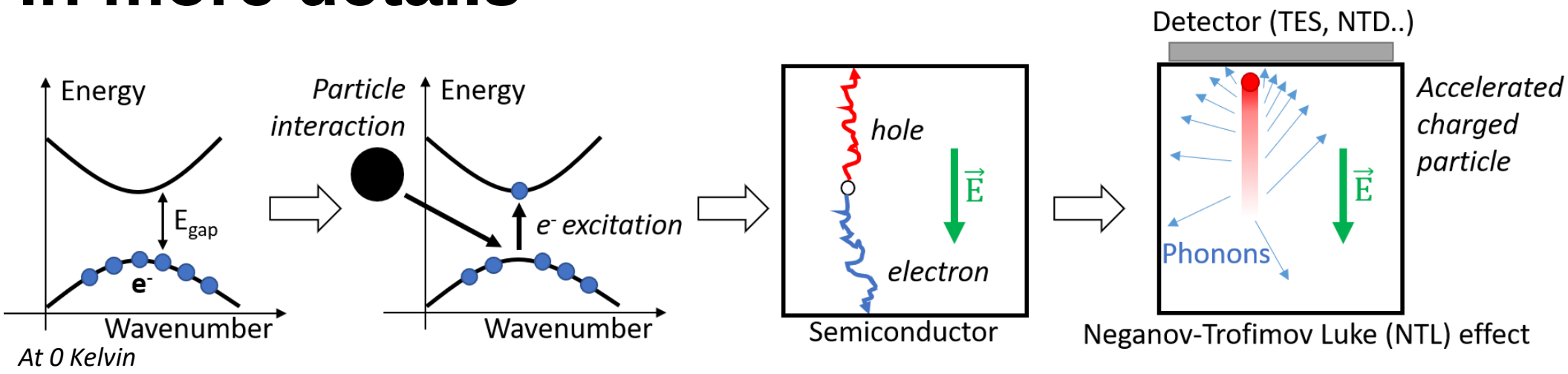
October 2025 Paris	IJCLab – Thesis Direct dark matter detection based on cryogenic devices for the TESSERACT project

under the supervision of Stefanos Marnieros



Direct detection of Dark Matter

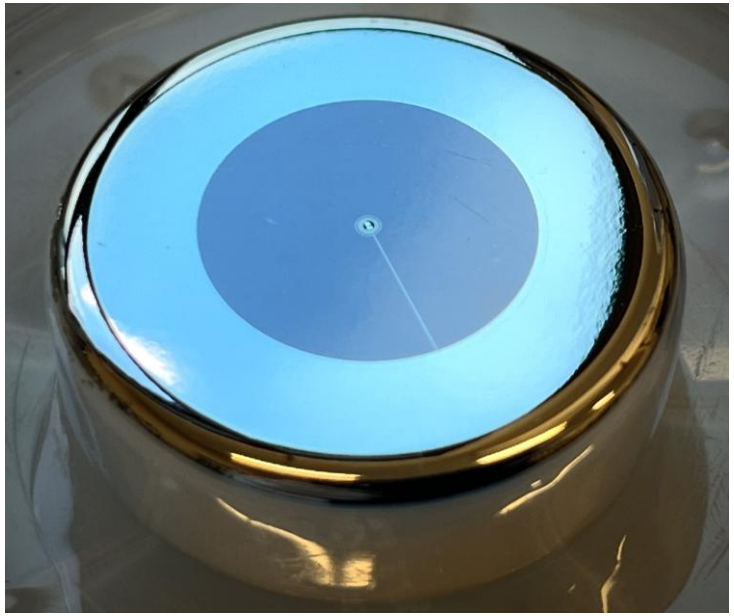
In more details

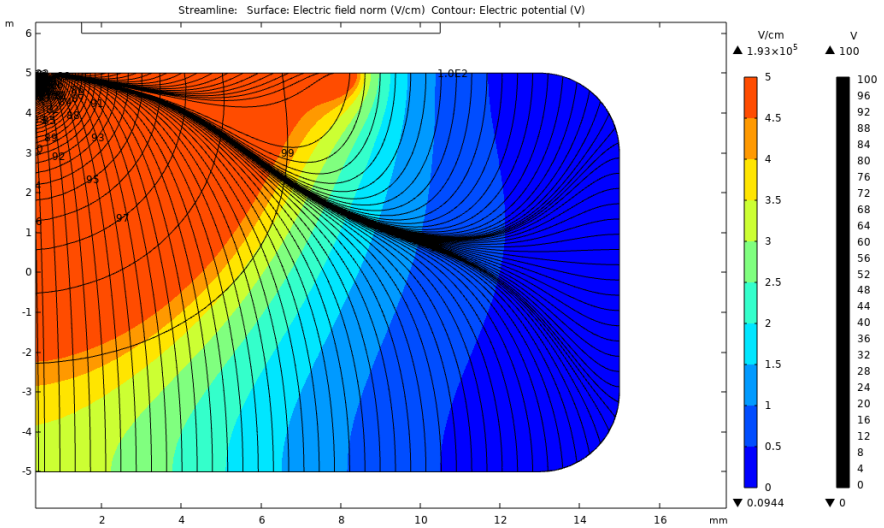


Cryogenic detector using NTL effect

TESSERACT project:

- Germanium
- 50mK
- Few eV resolution
- Modane in 2028





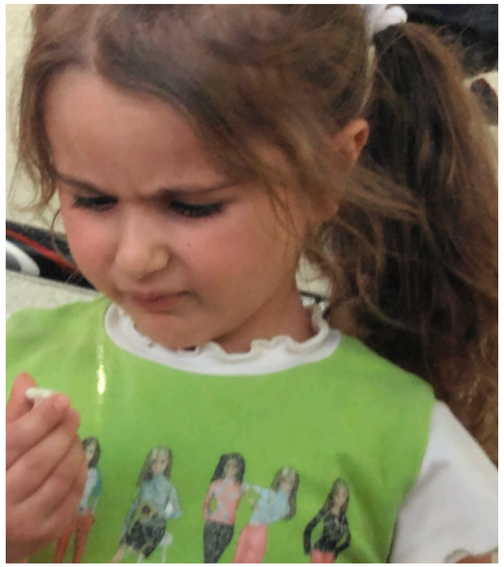
Sally Hankache

Baskinta, Lebanon

M1: Paris Physics Masters

M2: Astronomie, Astrophysique et Ingénierie Spatiale

SORBONNE UNIVERSITÉ

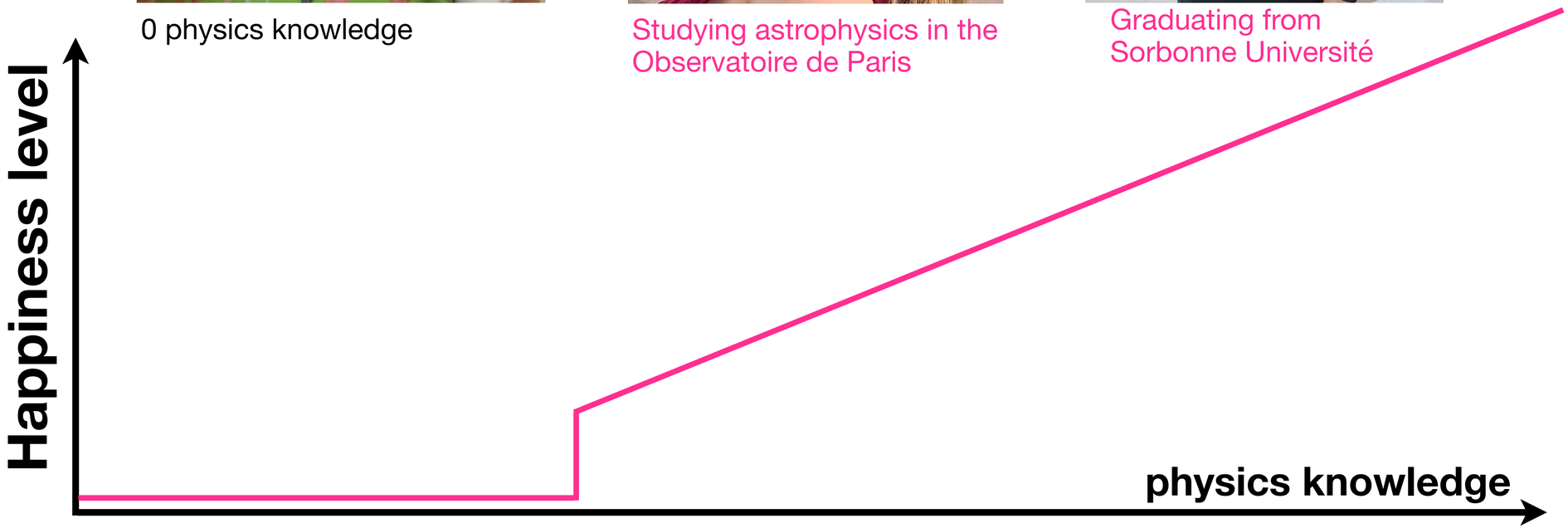


0 physics knowledge

La grande coupole (Meudon)

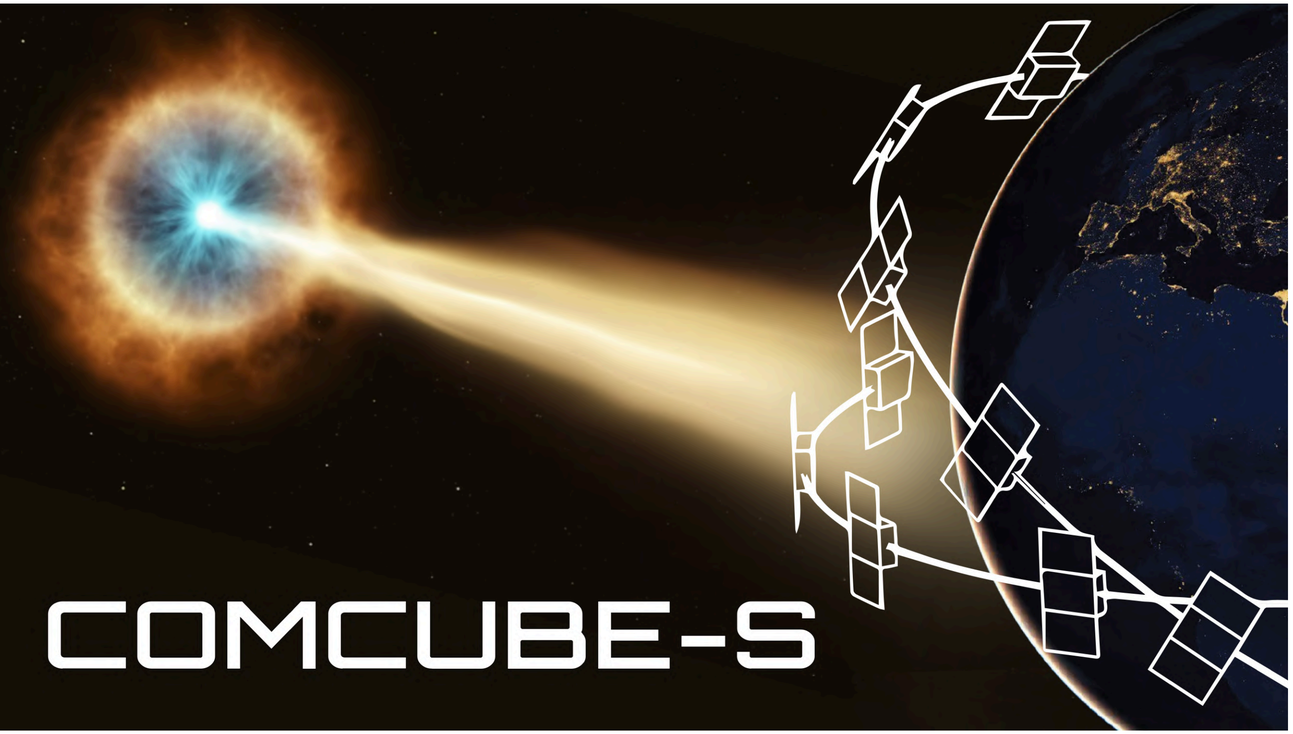
Studying astrophysics in the Observatoire de Paris

Graduating from Sorbonne Université



« Time-domain astronomy with the COMCUBE-S gamma-ray mission»

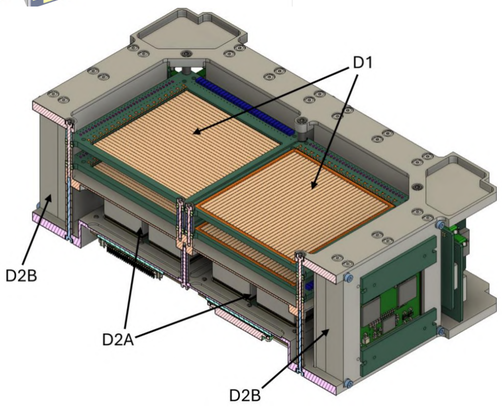
Supervisors: Vincent Tatischeff & Clarisse Hamadache

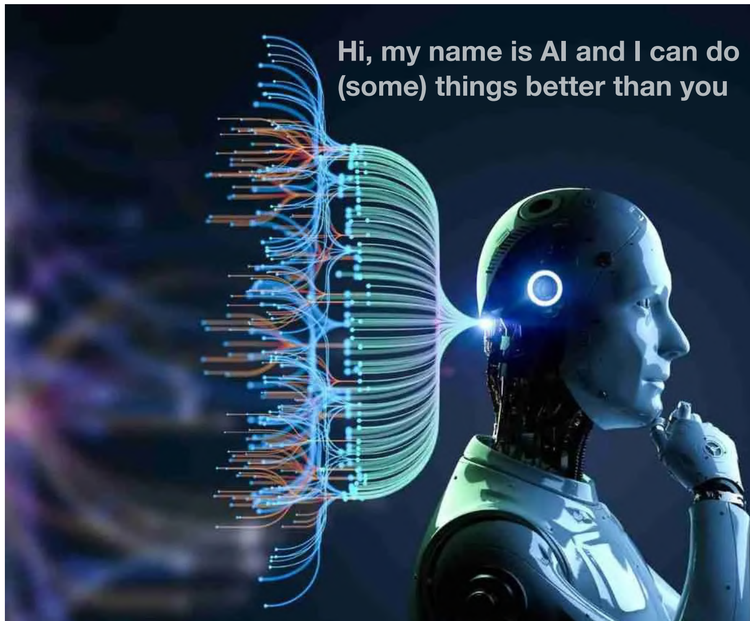


27 cubesats

Detection of GRBs: Gamma Ray Bursts

Imaging, spectroscopy, polarimetry





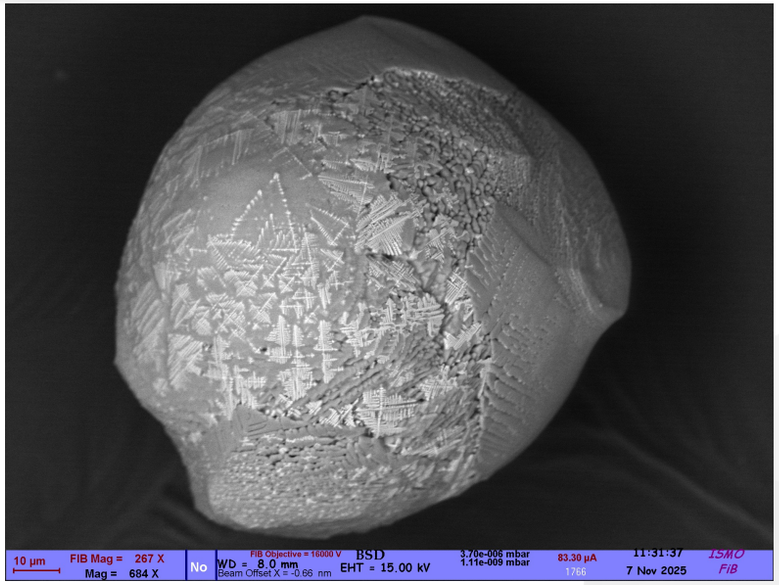
- Localizing the sources (using AI)
- Classification of the trigger types
- Using a broker system: FINK

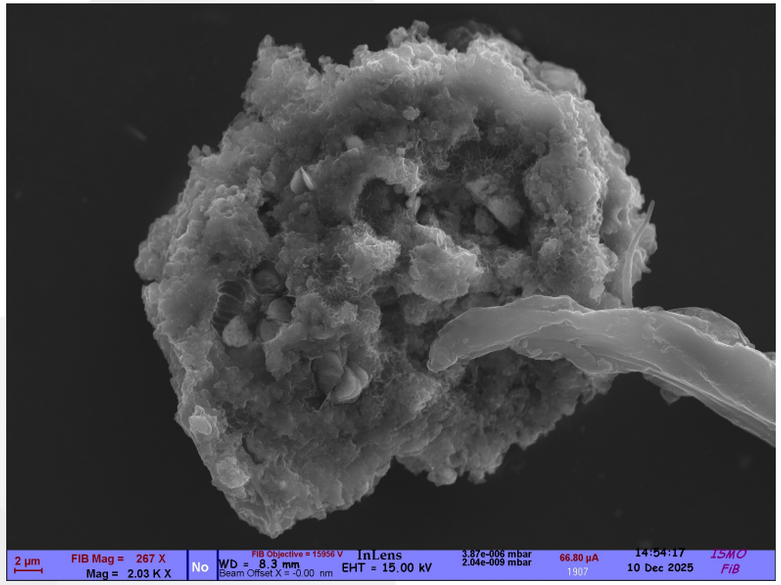
Micrométéorites Concordia

Ludivine Ebroussard

2ème Année BUT Mesures Physiques

Responsable de stage : Cécile Engrand

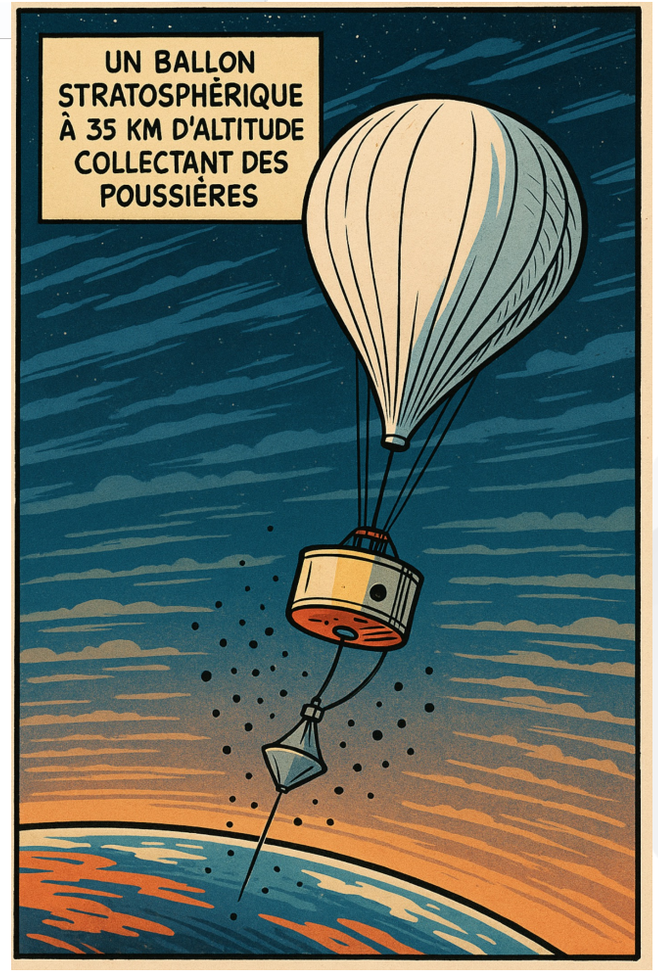


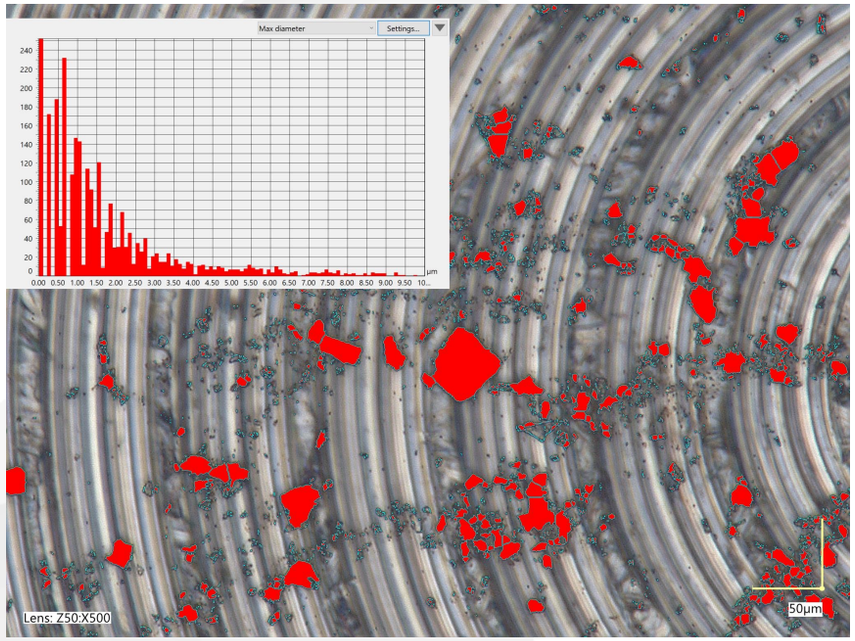


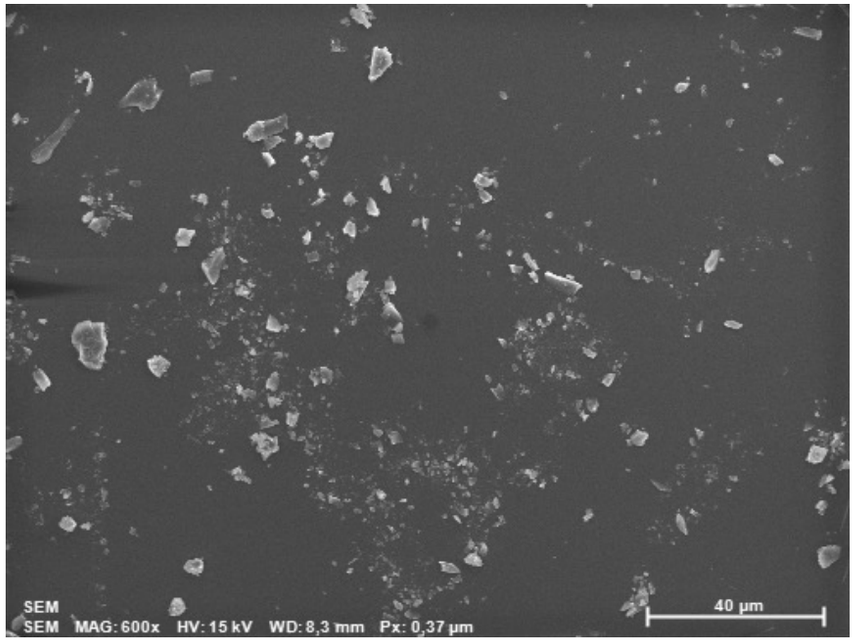
- Recherche de micrométéorites dans un filtre rapporté d'Antarctique
- Observation au Microscope Electronique à balayage (MEB)

=> Mieux comprendre la formation du système solaire

Projet MEDOR+







- Simulation de collecte et caractérisation de poussières au microscope optique et MEB
- Recherche d'un matériau adhésif (« gel de PDMS »)
- Essais de rinçage…

Angelo Lamure-Fontanini

1st year PhD student @ IJCLab

VERA C. RUBIN OBSERVATORY

STARDICE

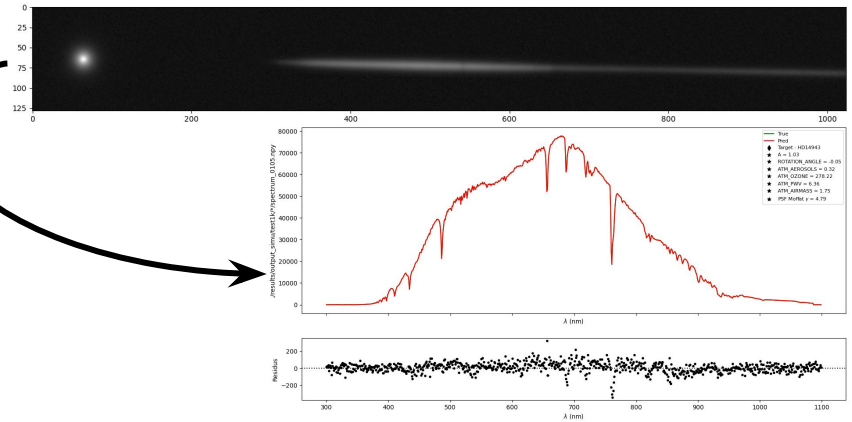
IJCLab Irène Joliot-Curie Laboratoire de Physique des 2 Infinis

From slitless spectrophotometry to the equation of state for dark energy, with the OHP/StarDICE & LSST/AuxTel experiments

Goal : characterization of atmosphere with AuxTel, for LSST data ➜ obtain a mmag precision on flux

Cosmological context : use new LSST supernovae to better constrain dark energy

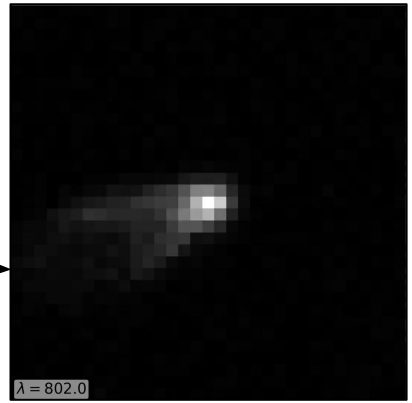
Spectrum extraction from spectrogram data, using machine learning
➜ permit to extract atmosphere parameters

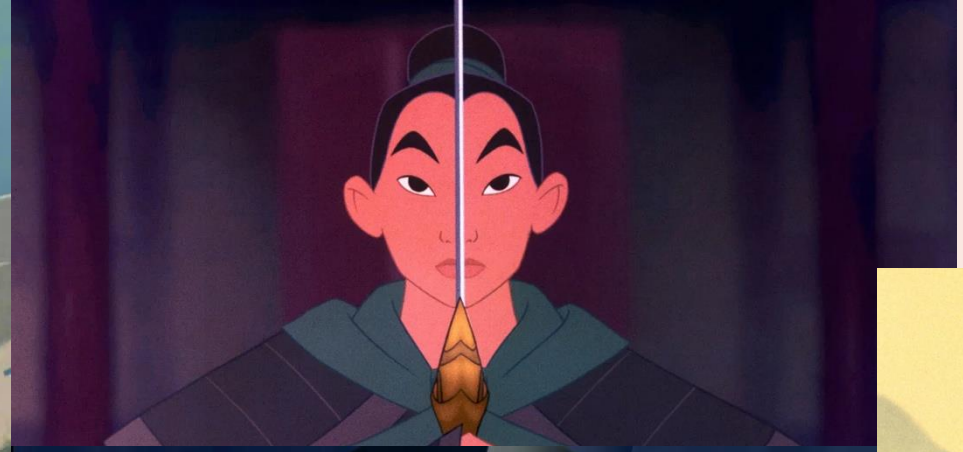


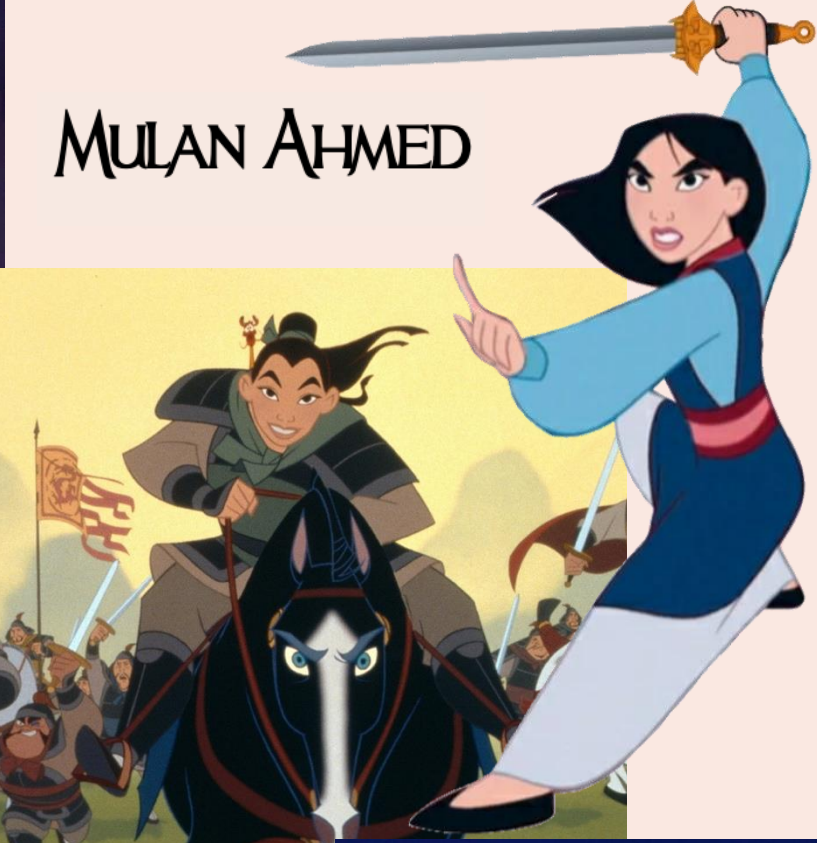
Ongoing work

PSF Characterization
➜ Here, evolution of order 1 StarDICE's PSF as a function of wavelength

mesure @OHP 1 month ago with the TCBP

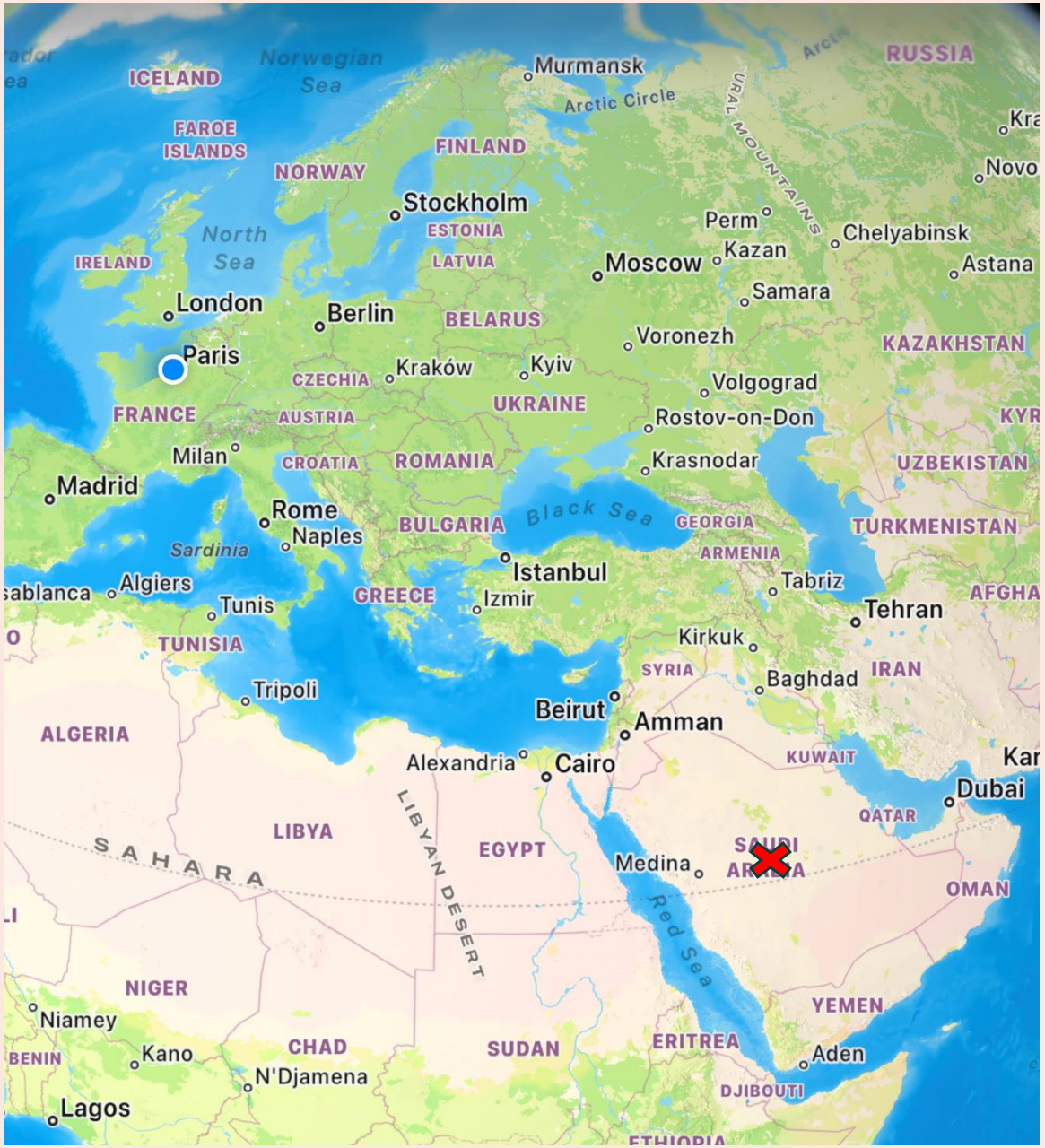




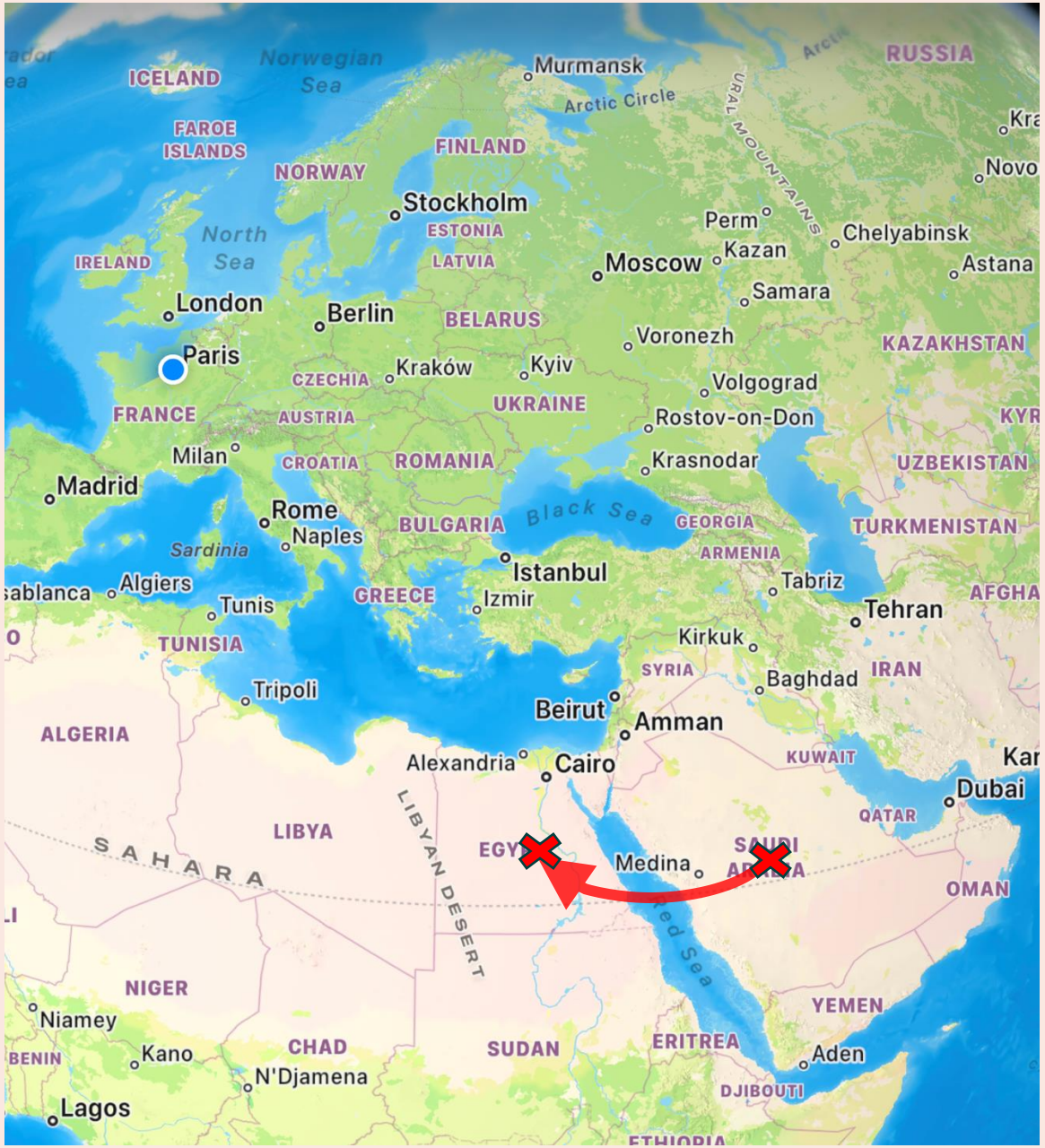


Who Am I?

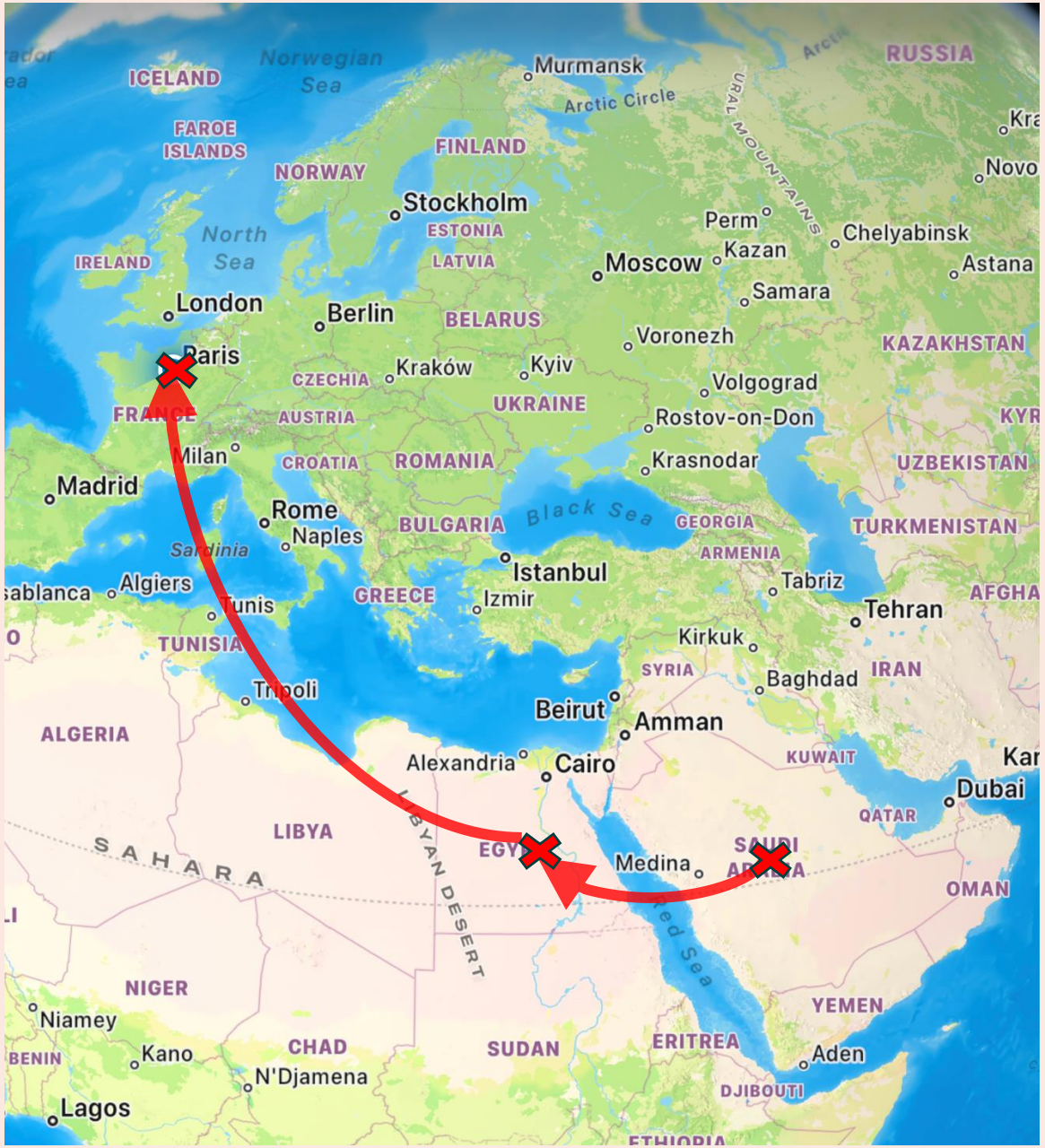
Where Have I Been?



Where Have I Been?

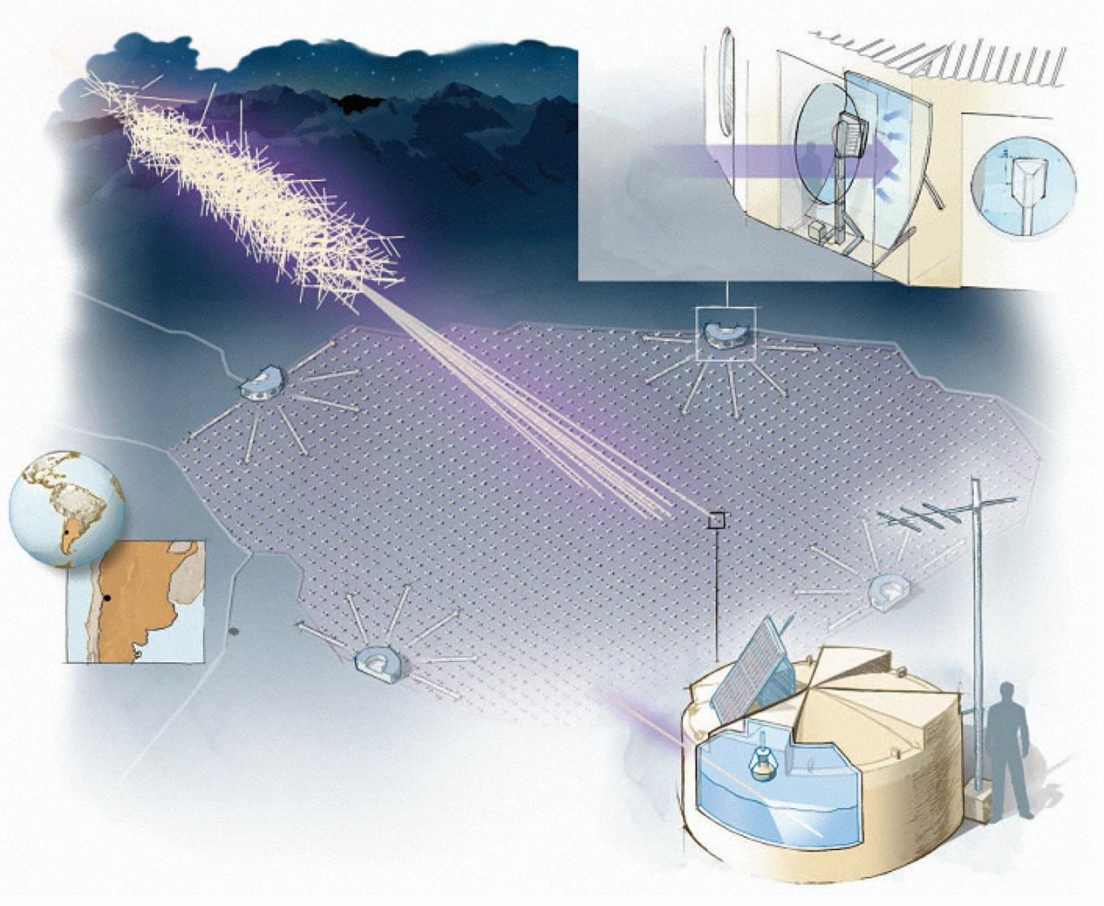


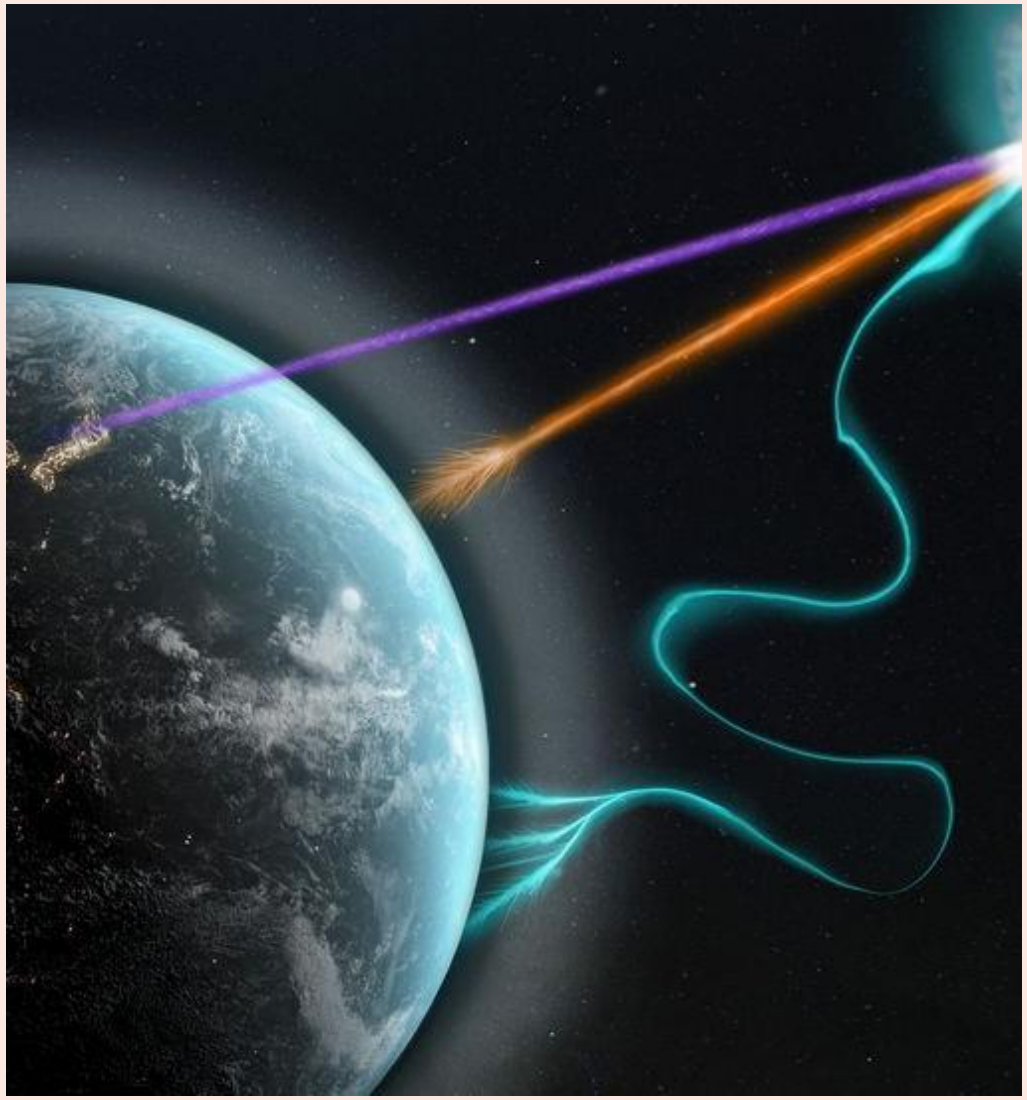
Where Have I Been?



Where Have I Been?

What Am I Doing?





Things I Love

Who am I ?

Issam

BSc in Physics (SU, 2019-2022)

MSc in Cosmology and High-Energy Universe (UCBL, 2023-2024)

(Second) MSc in Theoretical Physics (AMU, 2024-2025)

PhD Student working on the DAMIC-M experiment (IJCLab, 2025-ongoing)

PhD Thesis :

Dark Matter and Hidden Sector U(1): The DAMIC-M Experiment

- Freeze-in Models
- Extra U(1) Gauge Symmetry Phenomenology
- Data Analysis (soon)

Georgios Savvidis

Post-doc, IJCLab

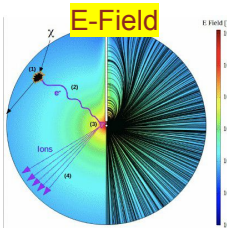
L'Univers du pôle A2C: épisode 9: December 16, 2025

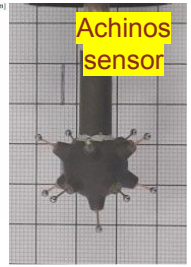
Activities

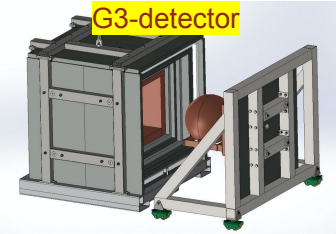
- PhD at Queen's University, Canada with NEWS-G: DM-proton recoils using a Spherical Proportional Counter in pure methane @ LSM
  - Contributions:
    - NEWS-G commissioning @ LSM
    - Fiducial volume calibration
    - R&D on sensors

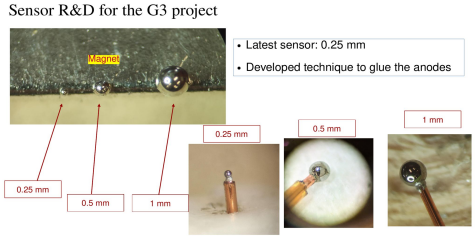
- 1st Post-doc at Queen's University with NEWS-G:
  - Contributions:
    - Leading the NEWS-G3 project: Detection of reactor neutrinos with CEvNS using an SPC
    - High pressure SPC development (10 – 20 bar)
    - Sensor R&D
    - Simulations

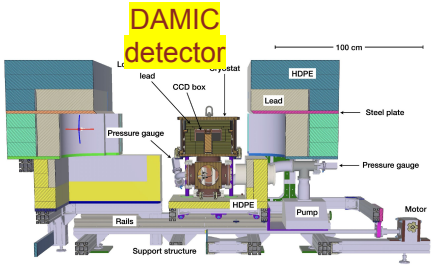
- 2nd Post-doc at IJCLab with DAMIC-M
  - Currently working on:
    - Background characterization
  - Future work:
    - DAMIC-M commissioning @ LSM
    - Data analysis
    - AOB

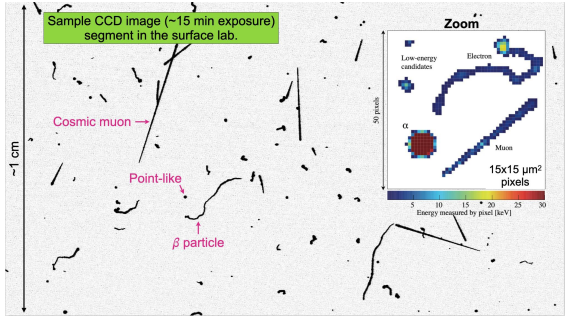










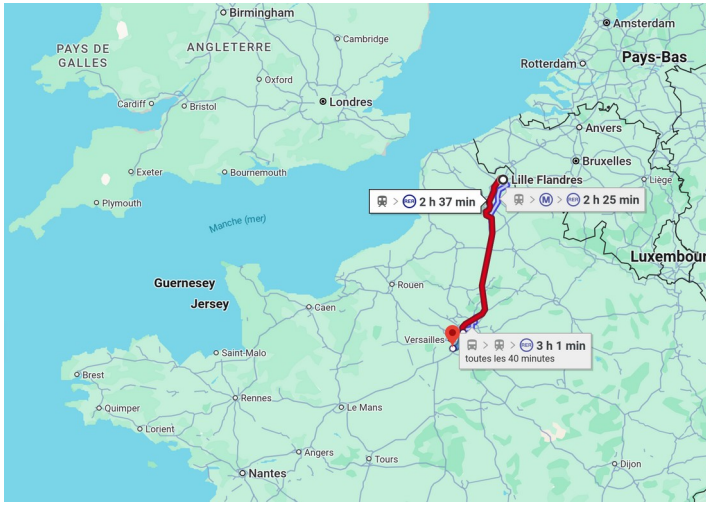


Clément (紅令門) Leloup (レル)

PhD (CEA Saclay, France) – 2015/2018

Constraints on extra dimension inspired models in particle physics & cosmology

1. **Postdoc (APC, France) – 2019/2022**
2. **Postdoc (Kavli IPMU, Japan) – 2022/2025**
3. **Postdoc (IJCLab, France) – 2025/2027**

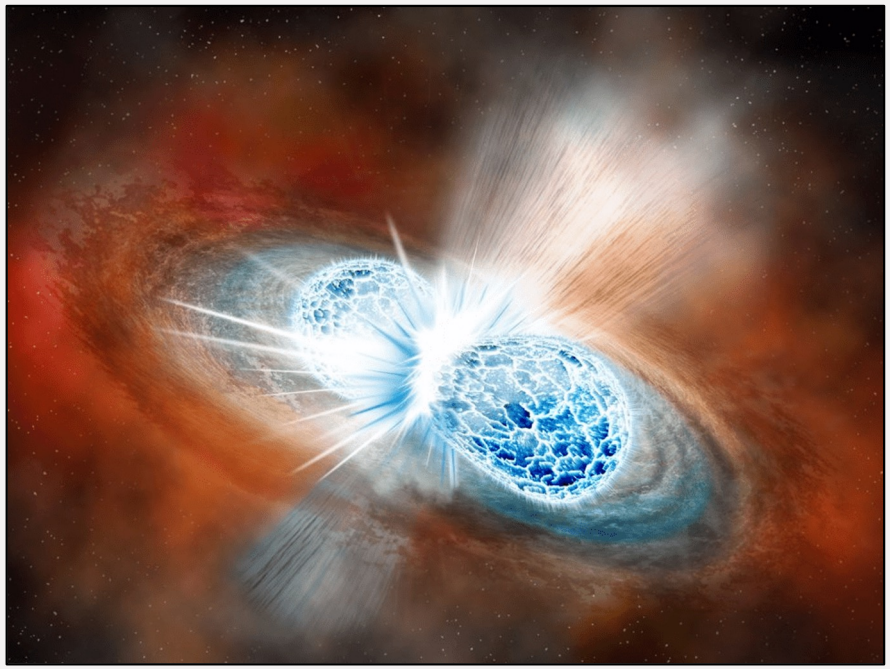


CMB data analysis for B modes

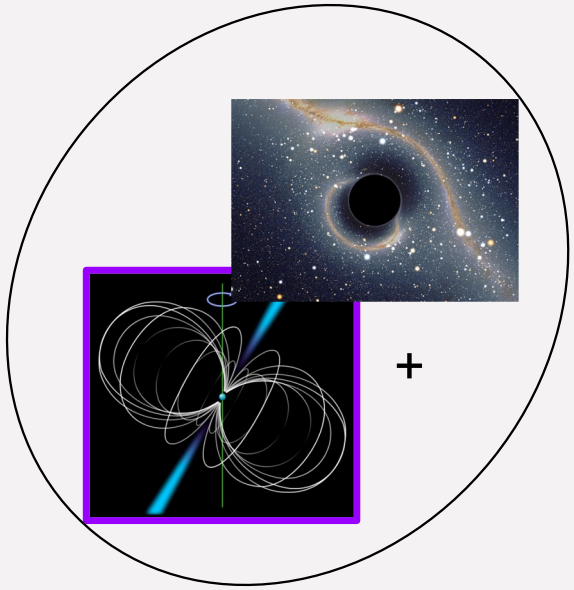
- Foreground cleaning
- Instrumental effects
- Inflation phenomenology

Detection and Characterization of Explosive Fast Transients with Vera C. Rubin Observatory and GRANDMA

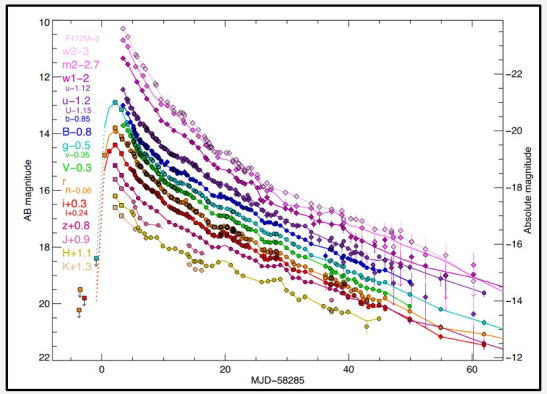
Alex Jacquesson
(IJCLab/IN2P3, Université Paris-Saclay)



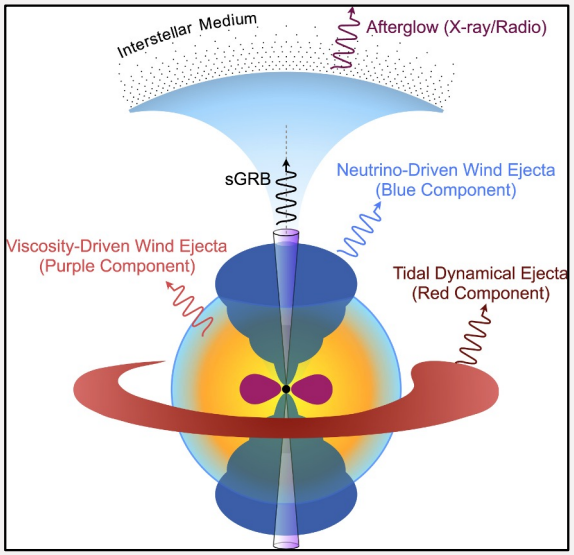
Compact Objects



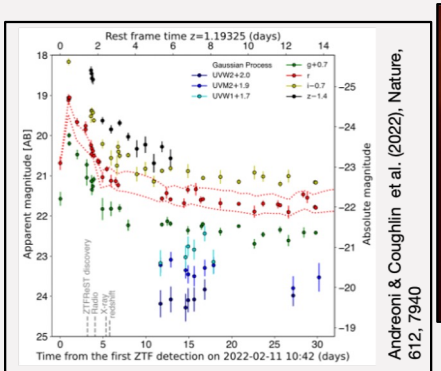
A wide range of fast transient phenomena



FBOT (Lightcurve of AT2018cow)

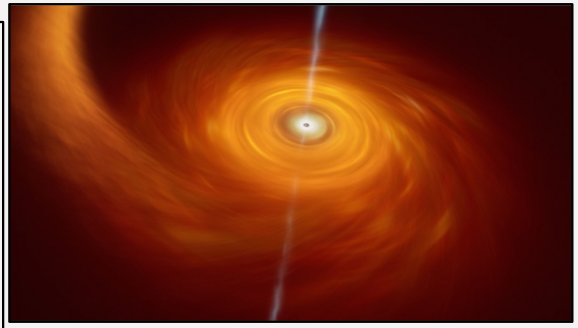


Kilonovae (KNe)

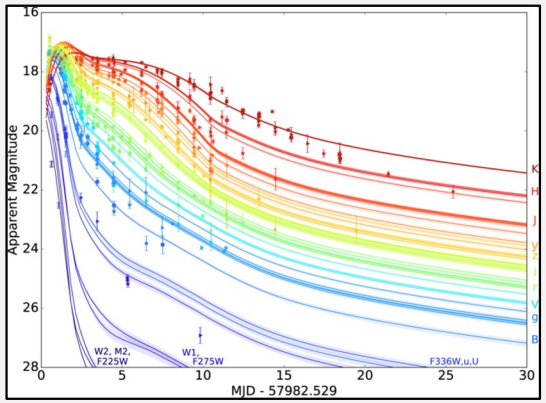


Andreoni & Coughlin et al. (2022), Nature, 612, 7940

Tidal Disruption Event



Jetted-TDE



AT2017gfo

In short :

- Data analysis
- Optical follow-up with telescopes (Colibri)
- Bayesian inference (NMMA)

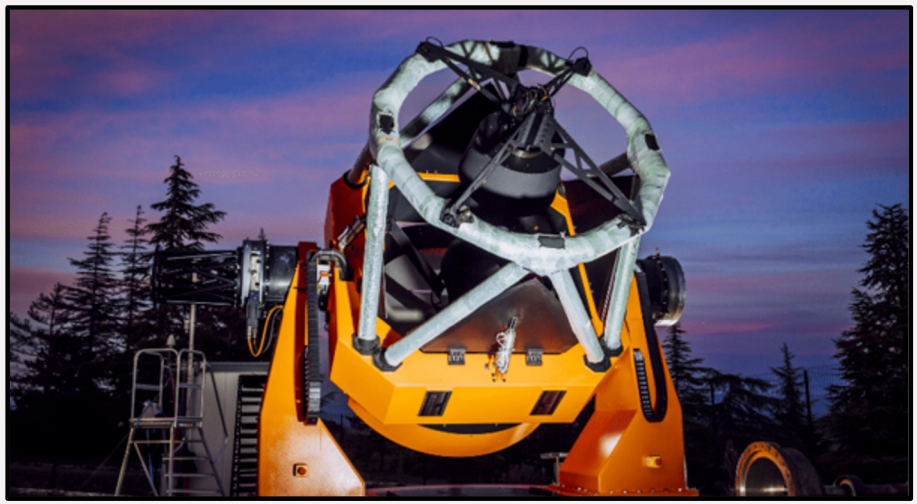


Image du Télescope Colibri

What I do other than JUST PHYYYSICS :

Running (5km/10km) and Track (1500m)

A little bit of piano (when I have time)

Fangfei LIU (刘芳菲)

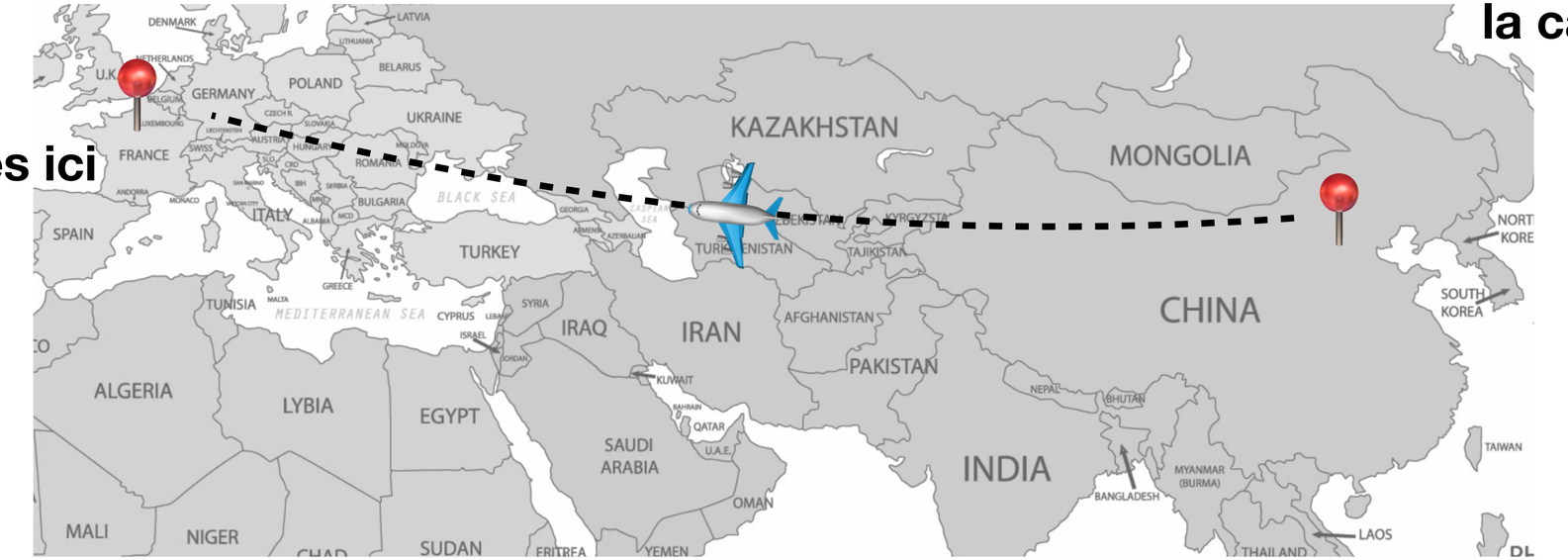
Mac: Beijing Normal University

PhD: IJCLab

Je viens d'ici,

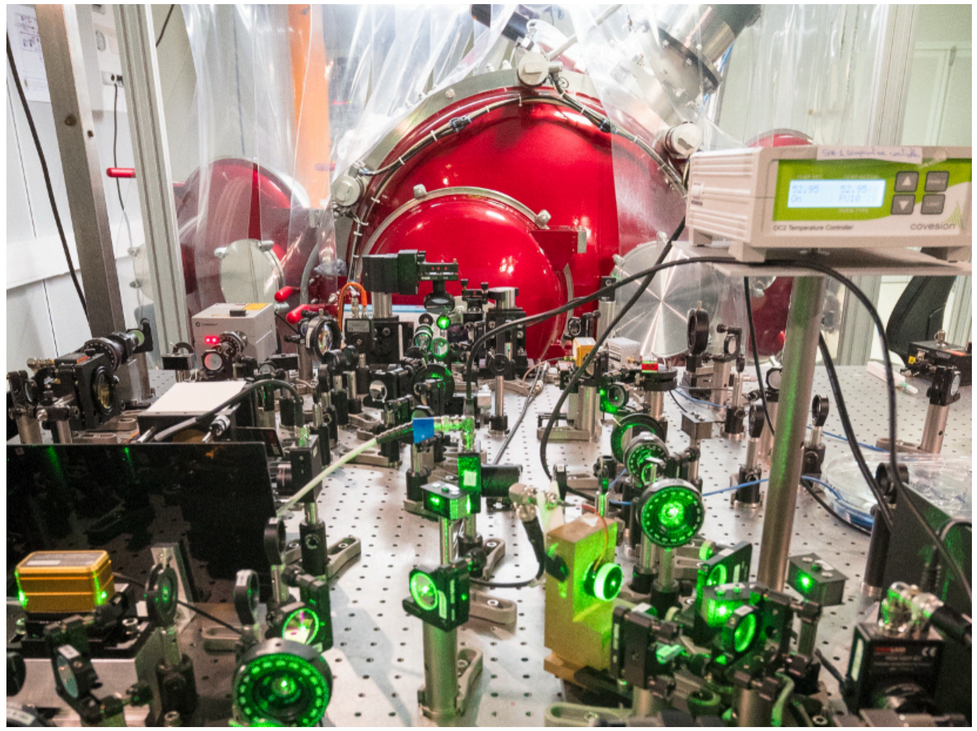
la capitale de la Chine.

Nous sommes ici



En galère avec le français / Blogueuse pas très connue / Accro à la baguette

TOPIC: Automatic Alignment Control for the Phase II of the Advanced Virgo



First year: CALVA

Second year: Virgo

Sarah Antier

Première Astronome Adjointe à l'IJCLAB
Observatoire des sciences de l'univers de l'Université Paris-Saclay
Pôle A2C / Groupe Ondes gravitationnelles

Corps **National** des Astronomes et des Physiciens (CNAP)

3 sous corps : Astronomie, Surfaces Continentales - Océan – Atmosphère, Terre Solide
1667: Création of Observatoire de Paris: « recrutement d'un garde des instrumentset trois élèves » en 1784

3 missions pour les CNAP

Teaching at Paris-Saclay : 1/6 of my time
UE Immersion recherche / Methodes Numériques

« Tâche de service » : 1/3 of my time

Research : 50% of my time

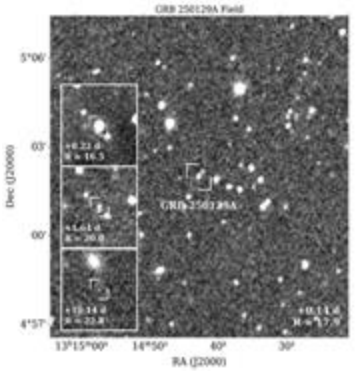
Groupe ondes gravitationnelles - IJCLAB

Pôle A2C / **Groupe Ondes gravitationelles**

Recherche : Co-direction avec P. Hello Thèse Hussenot (2022-2025), Jacquesson (2025-2028), Visiteur Paris-Saclay M. Coughlin (UNM, 2026)
Ingénierie Co-direction Projet Skyport C. Douzet + stage ingénieur 2026

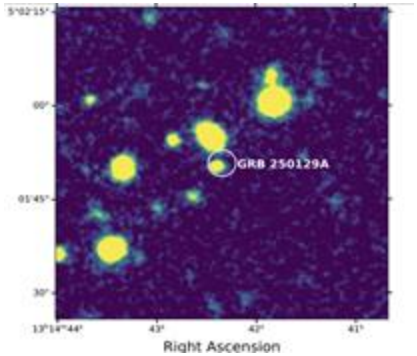
Tâche de service CNAP

In the framework of



A) On duty service
To follow-up gamma-ray SVOM alerts with TAROT & Colibri

LIGO VIRGO KAGRA



B) Join detection with SVOM And LVK GW detectors

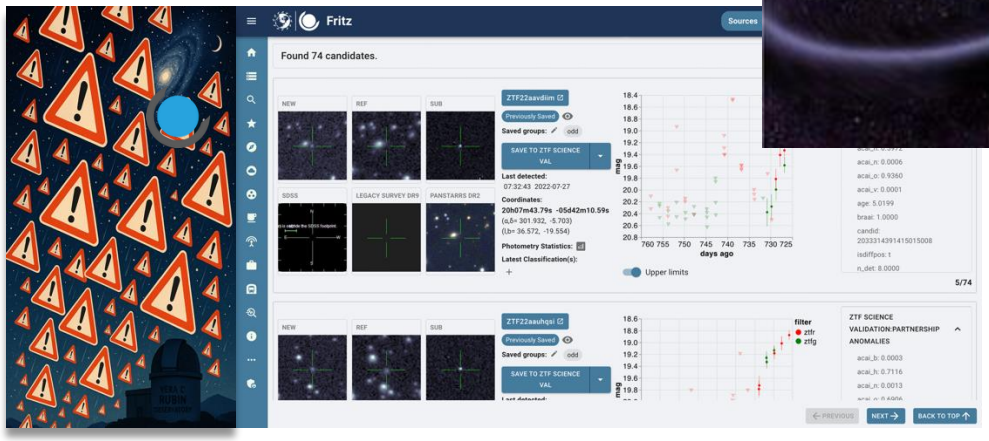
Autres Tâche de service : https://osups.universite-paris-saclay.fr/services-nationaux-dobservation-de-losups/

Projets de Recherche

Détection conjointes Sursaut-Gamma vs Ondes gravitationnelles
Infrastructure Alertes GW

Suivi d'alertes
Réseau télescopes visibles (37)
Réseau Physiciens/Astro (100)
Réseau Pro-am (> 200)

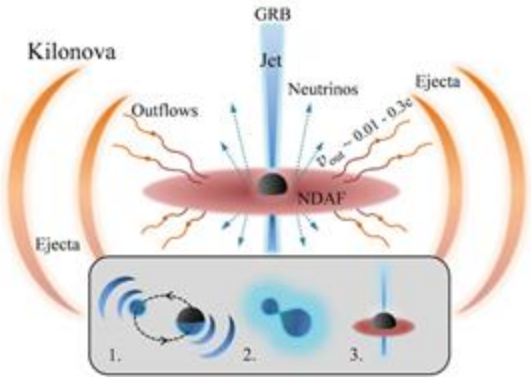
+ co-I SVOM, TAROT, Colibri, LSST, ZTF



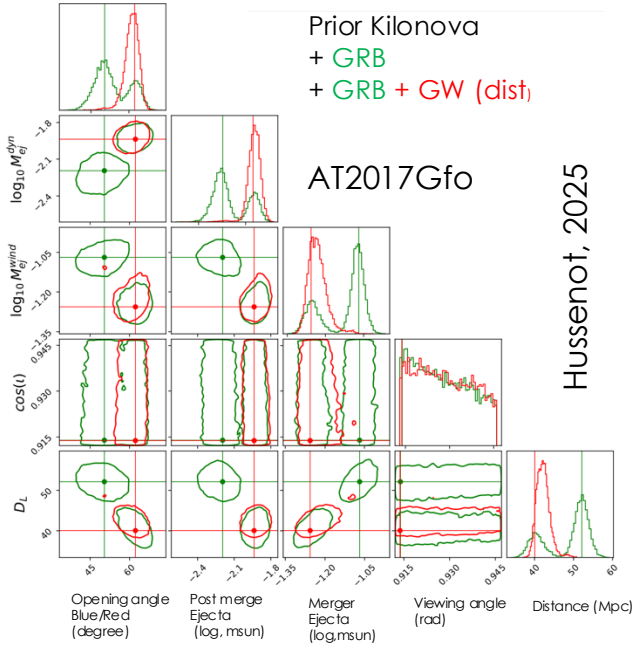
Plateforme Skyportal de gestion des alertes GW, LSST, …

GRB : angle de view

Kilonova : ejecta



GW : masses, angle de vue, ejecta



Léo Vacher

Mail: *leo.vacher@ijclab.in2p3.fr*
Website: https://leovacher.github.io

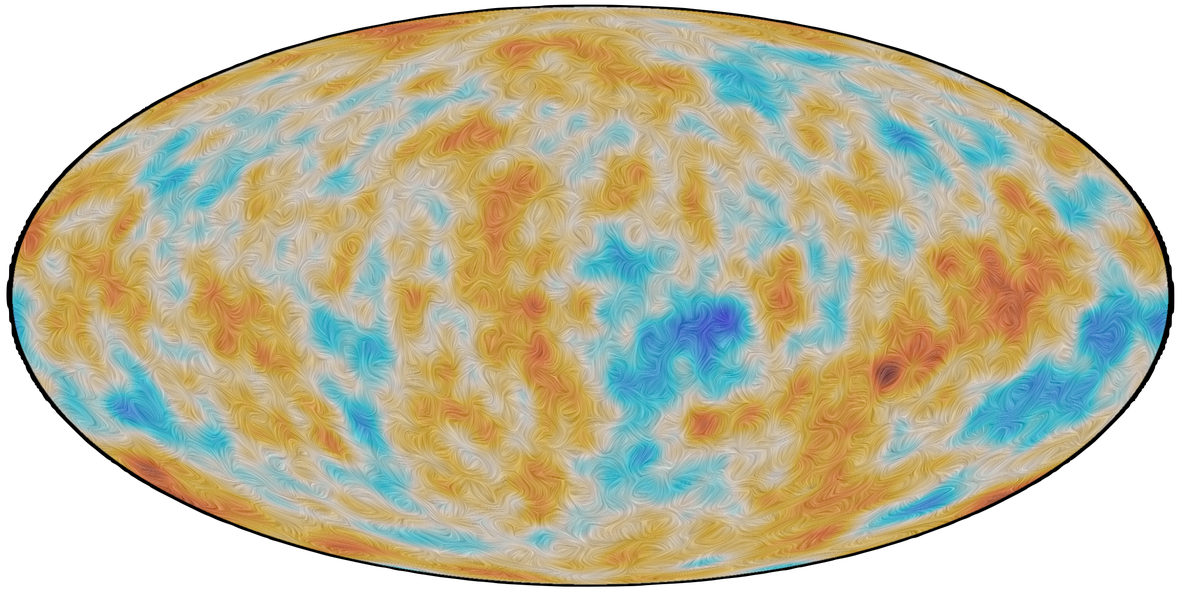
Licence, Master

Thèse (PHD)
Toulouse
2020-2023

Postdoc
Trieste
2023-2025

Chargé de recherches
Orsay
2025+

My research: the cosmic microwave background



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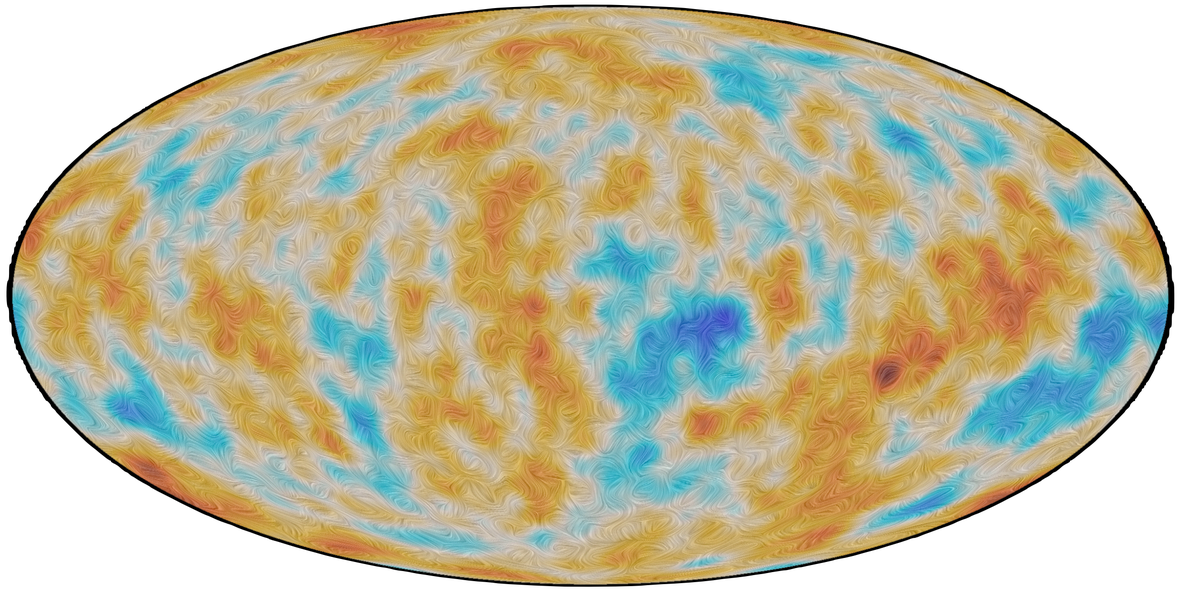

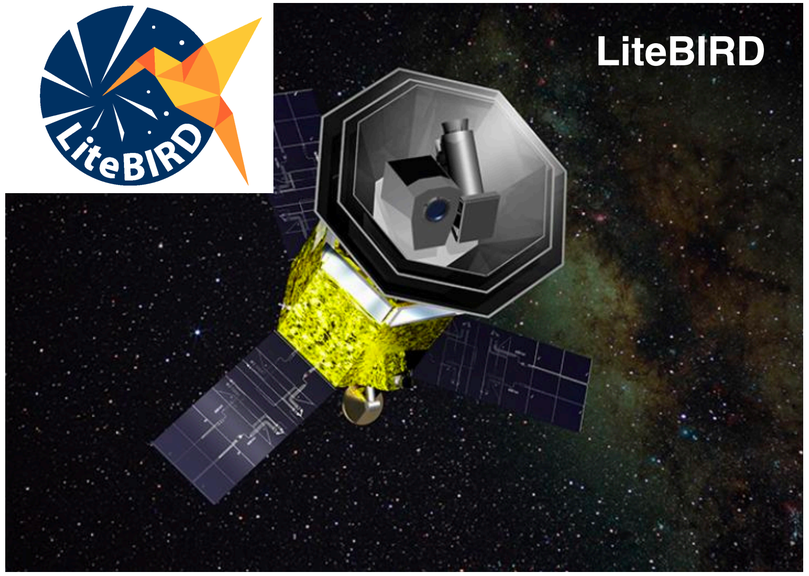

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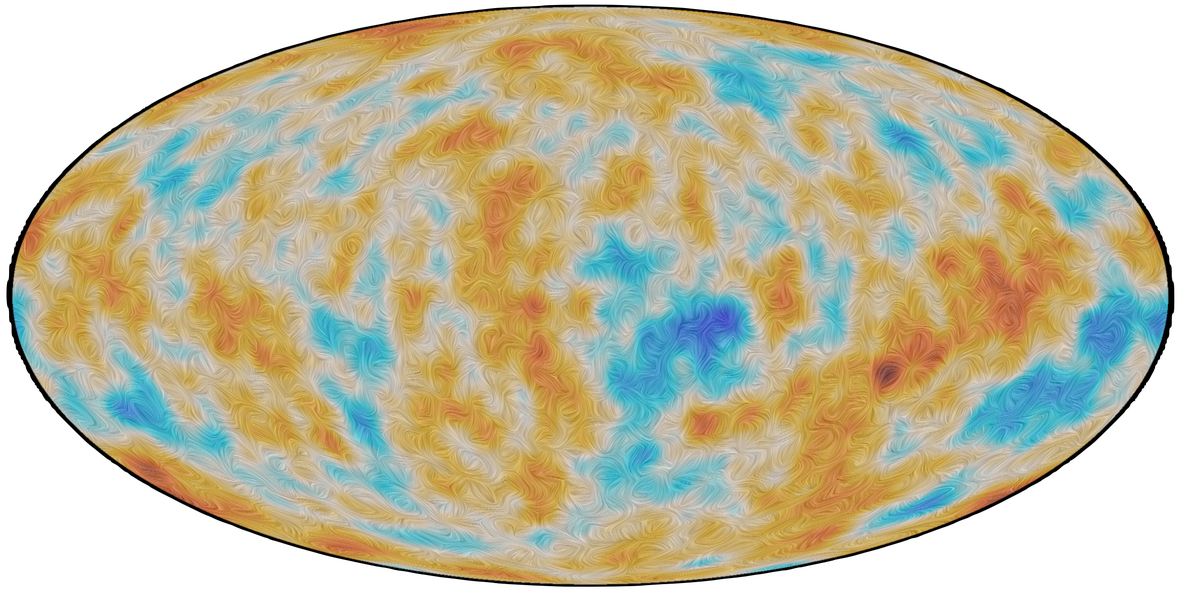

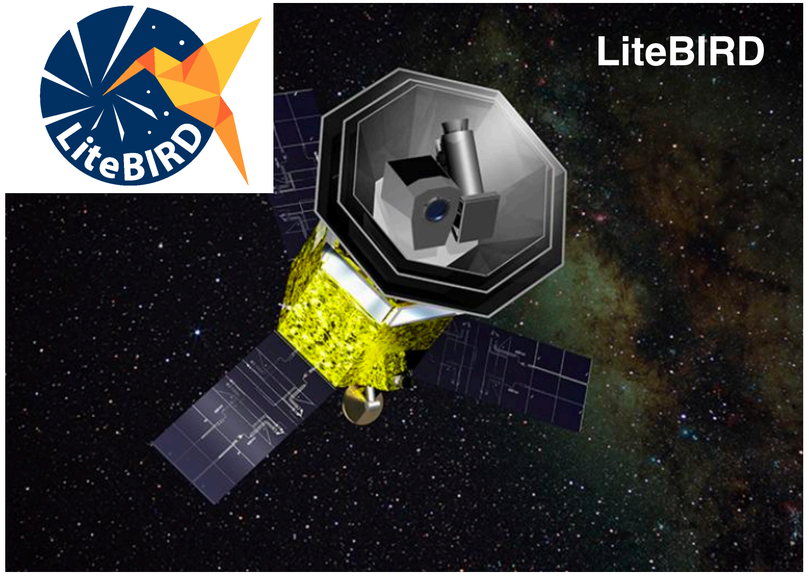

+ euclid consortium + FOSSIL

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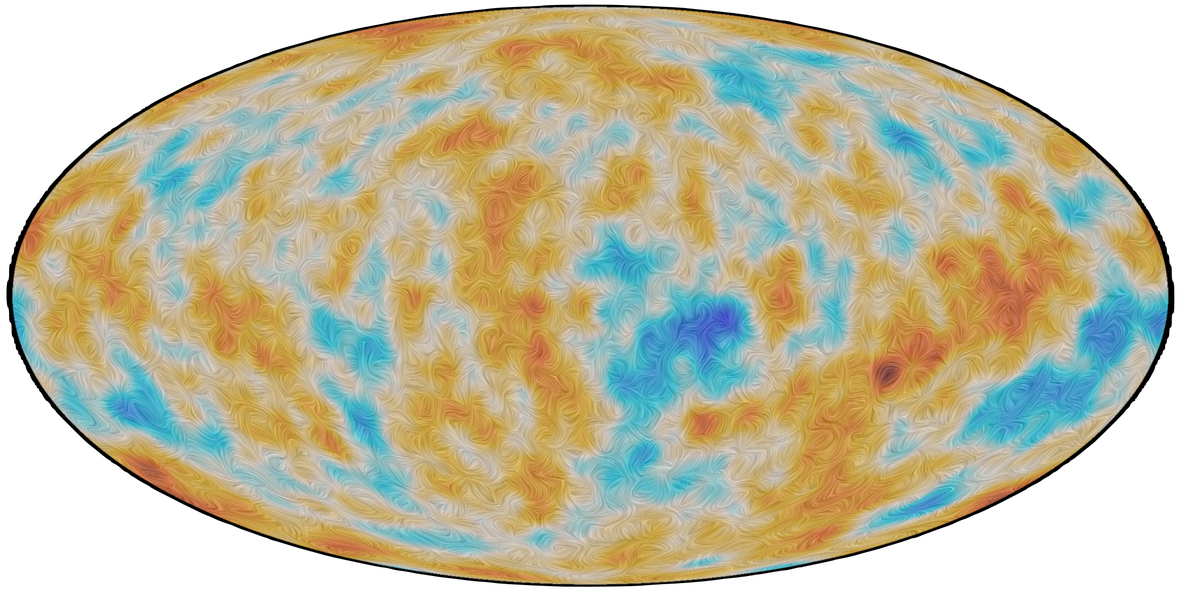
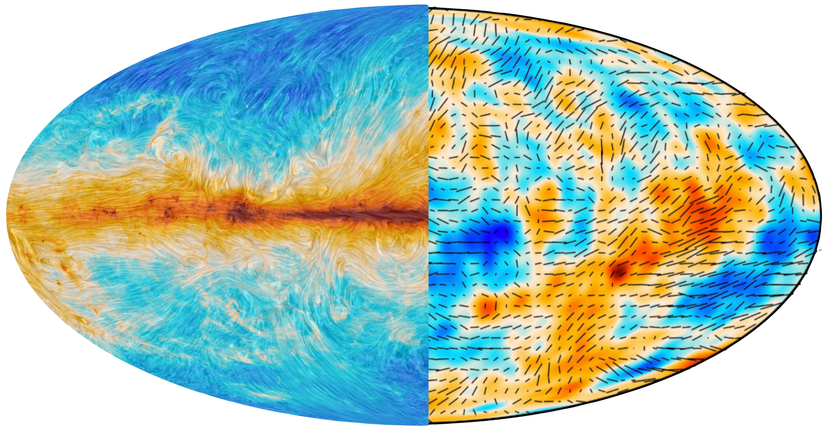
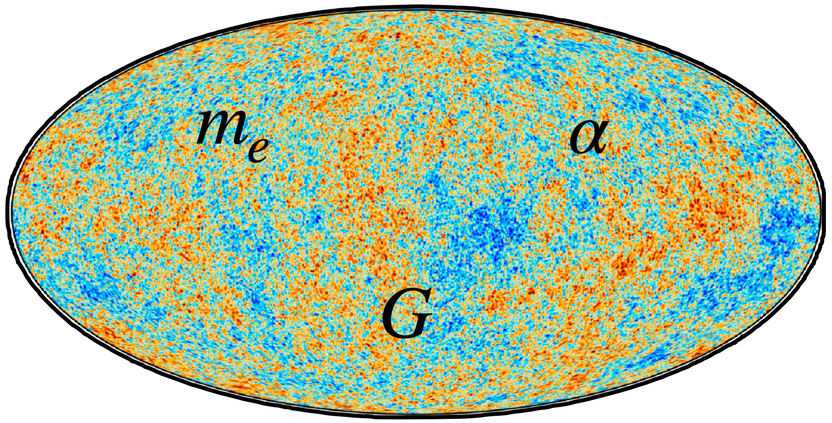


Component separation/modelling of the Galactic signal



Measure of the fundamental constants in the early universe (and elsewhere!)



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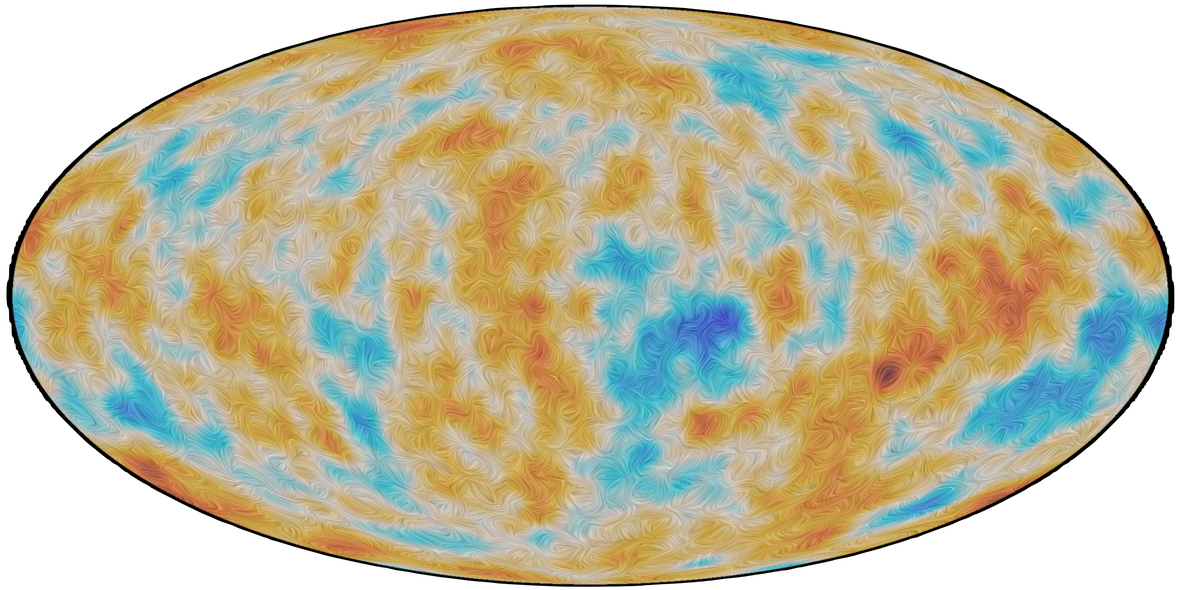

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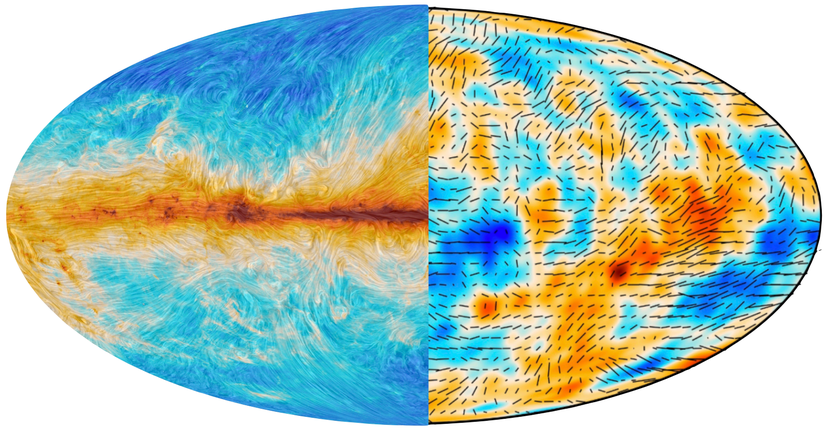

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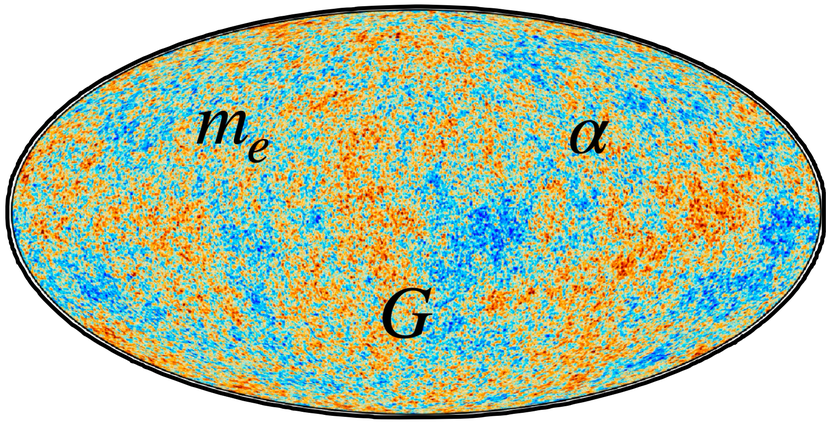

+ Philosophy and history of physics: Gauge/Yang-Mills theories and geometry