

# Enigmass Plenary Meeting

## Introduction

Fabienne Ledroit and Frédérique Marion

Grenoble

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# Welcome

to the third Enigmass2 plenary meeting

- ❑ We are very happy that this meeting can take place in person again, thank you for coming!
  - And thanks to our coordinators who helped organize the meeting
- ❑ Special greetings and thanks to our
  - Guests from IPAG
  - International scientific council members (on Zoom)

# Formal and Financial Matters

- ❑ Budget path: ANR → UGA (I dex) → CNRS
  - Enigmass2:  $5 \times 558.416 = 2.792.080$  €
- ❑ I dex confirmed in July 2021
  - Labex management transferred from ANR to I dex
  - Amendment to UGA-CNRS convention established in March 2022
  - Labex scheduled to end on 31/12/2024
  - Budget must be spent by that date
  - Exception: PhDs and postdocs can extend to 2025

# Calls for projects: PhD & postdocs

- Target: 14 2-year junior postdocs + 4 PhDs to support physics projects within WPs
  - 3 calls: 2020, 2021, 2022
  - 2020: 4 postdocs + 1 PhD
    - ATLAS (LAPP), Auger (LPSC, PhD), LSST (LPSC), NIKA2 (LPSC), theory (LAPTh)
  - 2021: 4 postdocs + 1 PhD
    - DUNE (LAPP), LHCb (LAPP), ATLAS (LPSC), theory (LPSC), ALICE (LPSC, PhD)
  - 2022 : 6 postdocs + 2 PhDs
    - ATLAS (LAPP), 2 x theory (LAPTh), Virgo (LAPP), LSST (LAPP), CMB-HRO (LPSC), DUNE (LPSC+LAPP, PhD), gamma spectro (LAPP, PhD)
  
- Projects assessed by external experts, selection done by management board
  - Scientific quality, strategic position, impact, feasibility & timing

# Calls for Projects: R&D

- ❑ R&D for future detectors
  - Overall budget 340 k€
- ❑ 2022 call : 4 projects received and funded
  - Major projects in line with identified priorities
    - Gravitational wave detectors (WP2, L. Rolland): 140 k€
    - Millimeter cosmology experiments (WP3, A. Catalano): 121 k€
  - R&D booster projects
    - ALICE FOCAL (WP1, R. Guernane): 15 k€
    - Micro channel CO<sub>2</sub> cooling for FCC (WP1, R. Kossakowski): 15 k€
- ❑ 2023 call
  - Only R&D booster projects, 50 k€ overall
  - 7 proposals received
  - As before: projects assessed by external experts, selection done by management board
  - Deadline for assessments: next Tuesday
  - Decision made public in ~2 weeks

# Current summary of postdoc/PhD/R&D allocations

## □ WP1

- Effective Field Theories (N. Berger) postdoc 2020
- Quark-Gluon Plasma with ALICE (G. Conesa Balbastre) PhD 2021
- Large-scale Liquid Argon detector prototype for DUNE (D. Duchesneau) postdoc 2021
- Detector operation and data analysis for LHCb (JF Marchand) postdoc 2021
- Dark QCD with ATLAS (MH Genest) postdoc 2021
- Axions at the crossroads (C. Smith) postdoc 2021
- DUNE vertical drift TPC module 0 (J. Collot) PhD 2022
- New phenomena in the dilepton final state at the LHC (T. Berger-Hryn'Ova) postdoc 2022
- Light new physics at the atomic frontier (C. Delaunay) postdoc 2022

## □ WP2

- Photons in Auger (C. Berat) PhD 2020
- Lorentz Invariance with CTA (S. Caroff) PhD 2022
- Cosmic-ray and new physics signatures in the very high-energy sky (F. Calore) postdoc 2022
- Extraction of error signals for gravitational wave detector control (L. Rolland) postdoc 2022

## □ WP3

- Etude des amas de galaxies avec LSST (C. Combet) postdoc 2020
- Cluster cosmology with the NIKA2 camera (F. Mayet) postdoc 2020
- Gravitational probes of dark matter (P. Serpico) postdoc 2020
- Cosmological constraints from galaxy clusters with Rubin (T. Guillemin) postdoc 2022
- Towards high resolution cosmology: the CMB-HRO project (J. Macias Perez) postdoc 2022

## □ WP1

- ALICE FOCAL (R. Guernane)
- Evolution du banc de caractérisation de l'évaporation du CO<sub>2</sub> dans des micro-canaux pour le refroidissement de la prochaine génération de détecteurs silicium du FCC : MC2O2 (R. Kossakowski)

## □ WP2

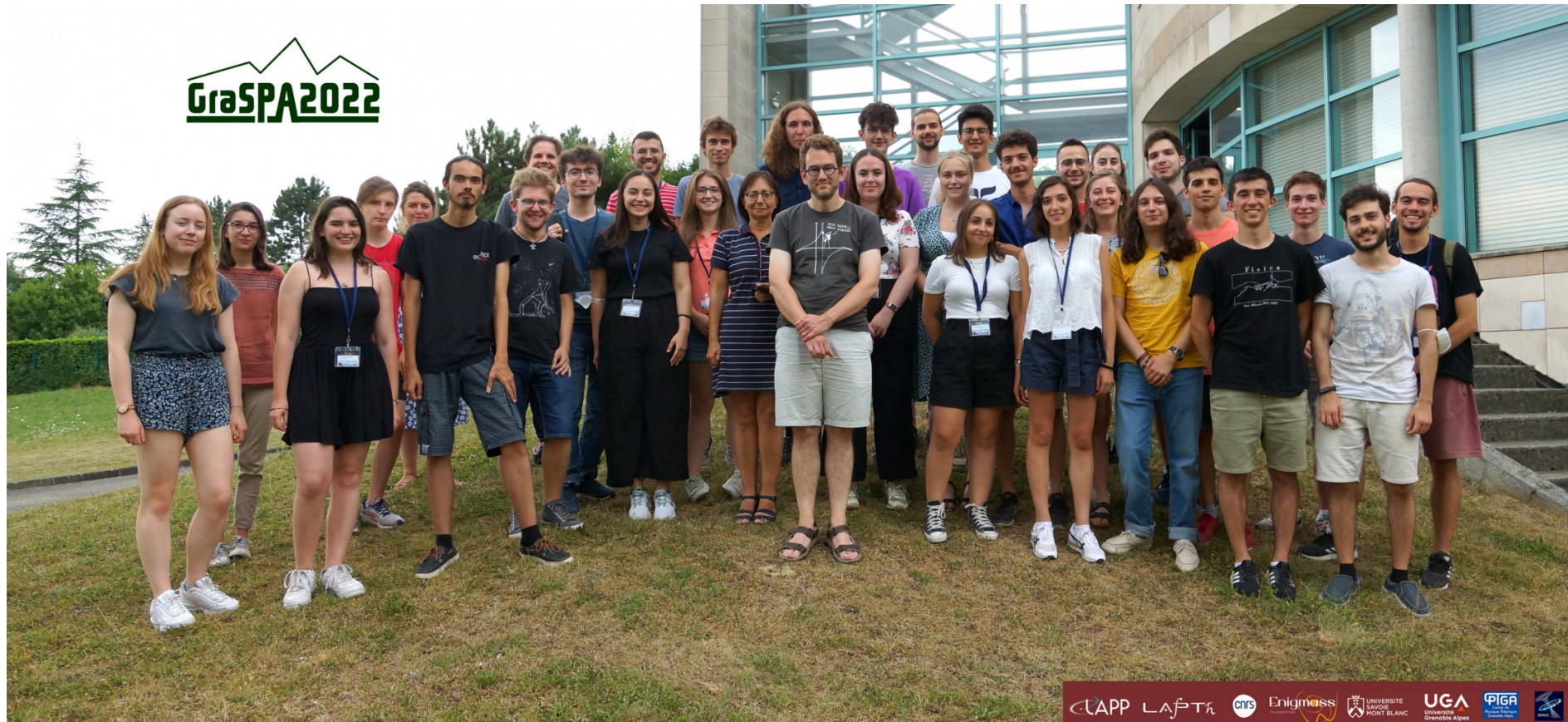
- Building an in-vacuum seismically isolated optical bench at LAPP for R&D towards future gravitational wave detectors (L. Rolland)

## □ WP3

- New generation lenses for next decade millimeter cosmology experiments (A. Catalano)

# Training: renewed success of our schools

- GraSPA 2022– 9<sup>th</sup> edition
  - 30 students, record number of applications (139)
  - extended hands-on session: full day (Saturday)



# Training: renewed success of our schools

- ❑ ESIPAP 2022 – 9<sup>th</sup> edition
  - 14 participants to course 1, 15 participants to course 2
  - 100% remote, different from 2021: pre-registered videos to be watched before live sessions





# Status of expenses

- ❑ Fraction of Enigmass2 budget committed so far: ~90%
- ❑ Significant increase of HR cost (HR cost ~70% of Enigmass2 budget)
  - Point d'indice, assurance chômage
  - Cost increase estimated to ~75 k€, TBC
  - Management board discussing how to absorb extra cost
- ❑ Schools
  - ESIPAP & GRASPA, ~30 k€/year
  - SOS 2022, 3k€
- ❑ Master internships
  - 2021: funding 12 4-month internships
  - 2022: funding 16 4-month internships
- ❑ Visiting scientists
  - None in 2020 and 2021, due to late budget & pandemic, two in 2022
  - Some budget left for 2023-2024
- ❑ Outreach
  - Spent ~10k€
  - Some budget left for 2023-2024

# ISC

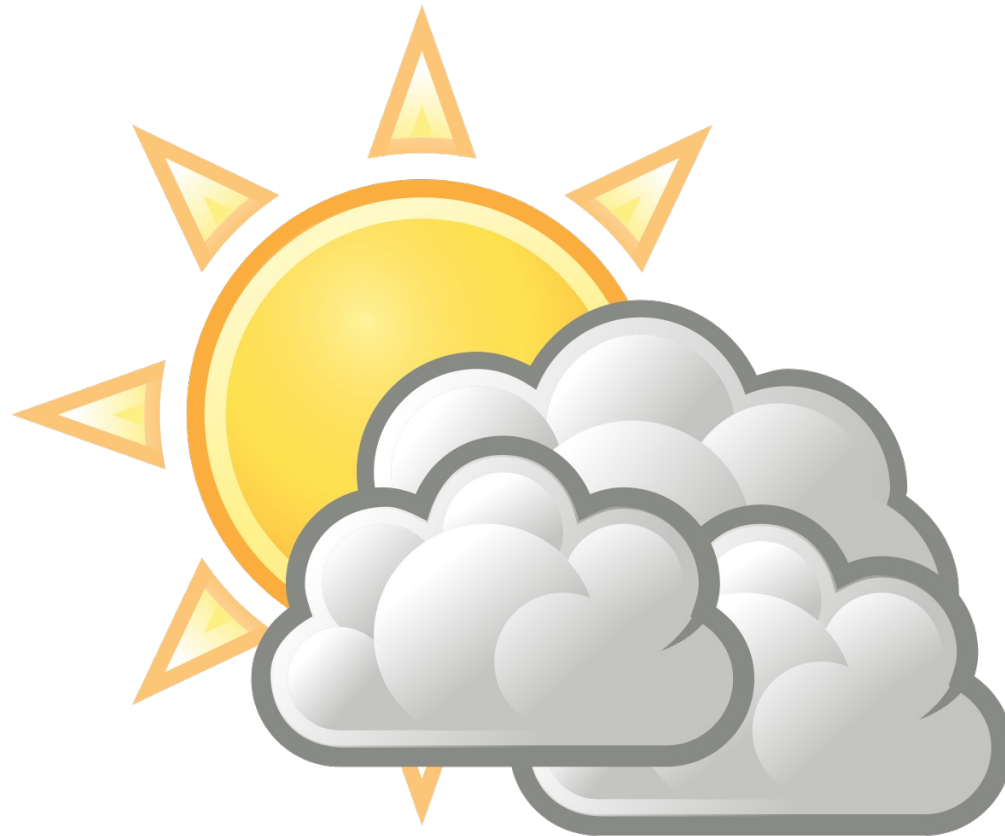
- ❑ ISC members
  - Wolfgang Adam, Nabila Aghanim, Michael Krämer (chair), Martin Kunz, Teresa Montaruli, Federica Petricca
- ❑ First meeting held in January 2021
- ❑ Second meeting today
  - Implementation of recommendations from 1<sup>st</sup> meeting
  - Post-2024 future

# Post-2024 future

- ❑ One full year of Idex UGA wavering about Labex prospects + UGA confirmed Annecy laboratories not part of Idex
- move forward and revive idea of a **federation : Enigmass+**
- ❑ A framework to
  - stabilise our collaboration
  - enable the possibility of long term forward planning
  - reinforce the regional visibility of our field
- ❑ Associating LAPP, LAPTh, LPSC and IPAG
  - IPAG teams working in H.E.S.S, CTA, SVOM, HE astronomy theory, Nika2/IRAM
  - scientific program based on Labex follow-up and outcome of IN2P3 prospective plans
- ❑ Presented to section 01 last Tuesday for creation in 2023
- ❑ Agreement in principle of UGA, USMB, IN2P3, INP, INSU for a co-funding starting in 2025

# Post-2024 future (cont'd)

- ❑ September 2022: UGA declared the possibility for some Labex to continue
  - 8-year projects starting January 2025
  - would contribute to the funding of the federation
- ❑ Public audition of Labex candidates next Wednesday
- ❑ Call for proposals in November, Enigmass should be invited (TBC)
  - Deadline February 2023
  - We will need your input to write the extension application, please contribute!
- ❑ April: assessment by external experts
- ❑ May: proponents right to reply
- ❑ July: Idex decision



**Enjoy the meeting!**

# Welcome to our new Enigmass2 fellows

Irene Bachiller

Daniel Lewis

Di Liu

Dimitrios Kantzas

Rance Solomon

Joshua Pinchault

Cyann Buisson