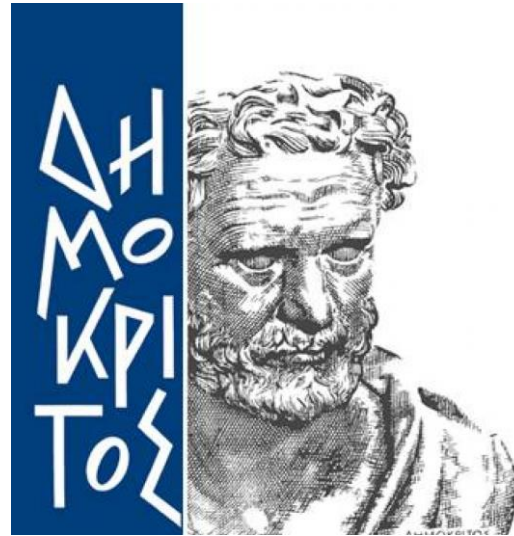


NCSR “Demokritos”



Institute of Nuclear and Particle Physics

Christos Markou

22/10/2024



DEMOKRITOS

The National Centre for Scientific Research “Demokritos”

100

ΤΡΑΠΕΖΑ ΤΗΣ ΕΛΛΑΔΟΣ

24 M 771908



ΔΡΑΧΜΑΙ
ΕΚΑΤΟΝ

ΠΑΡΡΩΤΕΑΙ ΕΠΙ ΤΗ ΕΜΦΑΝΙΣΕΙ

ΕΝ ΑΘΗΝΑΙΣ ΤΗ 15 ΟΚΤΩΒΡΙΟΥ 1967

Ο ΔΙΕΥΘΥΝΤΗΣ

Ο ΔΙΟΙΚΗΤΗΣ

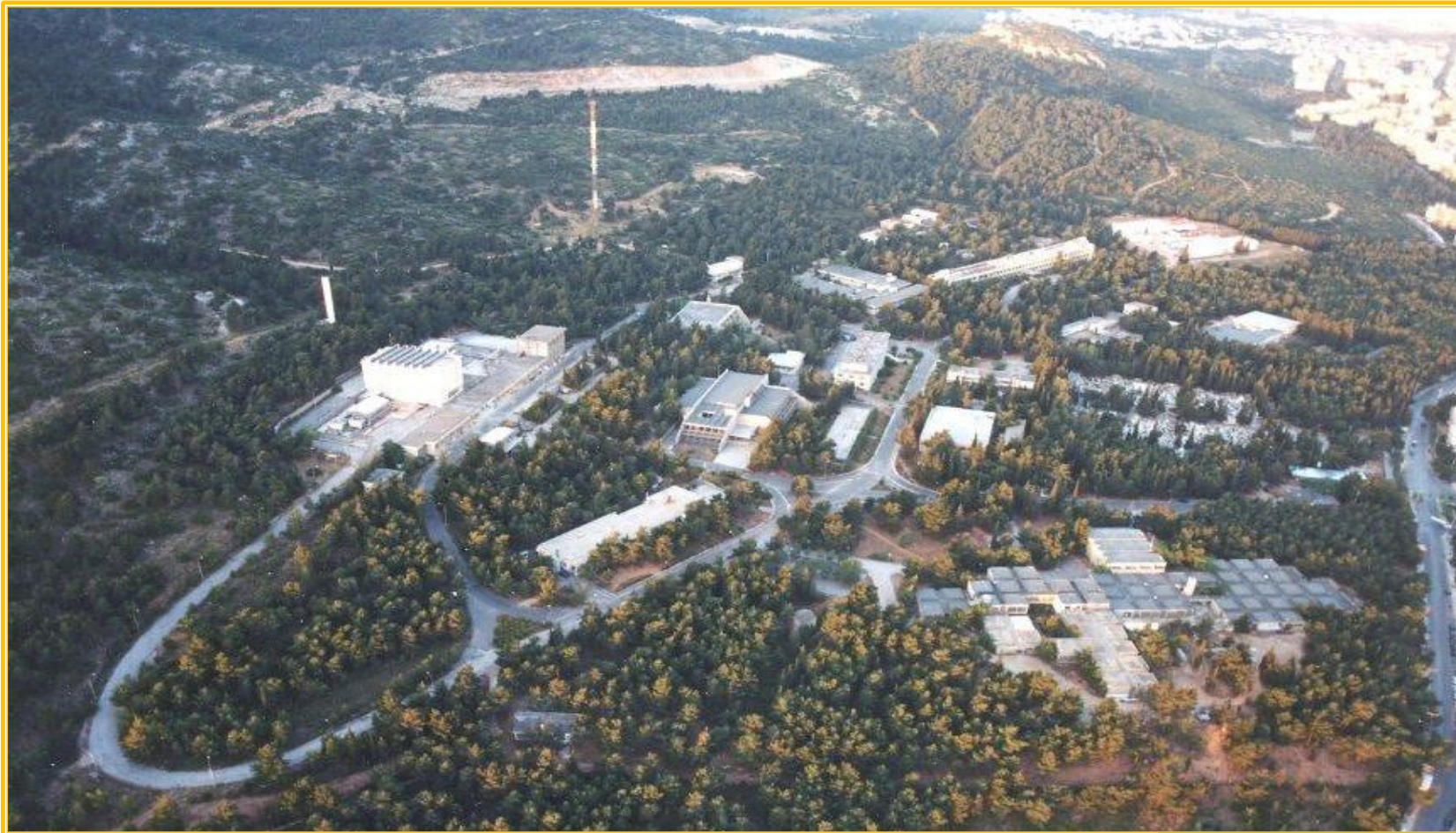
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100



Human Resources



Personnel
TOTAL

1.000

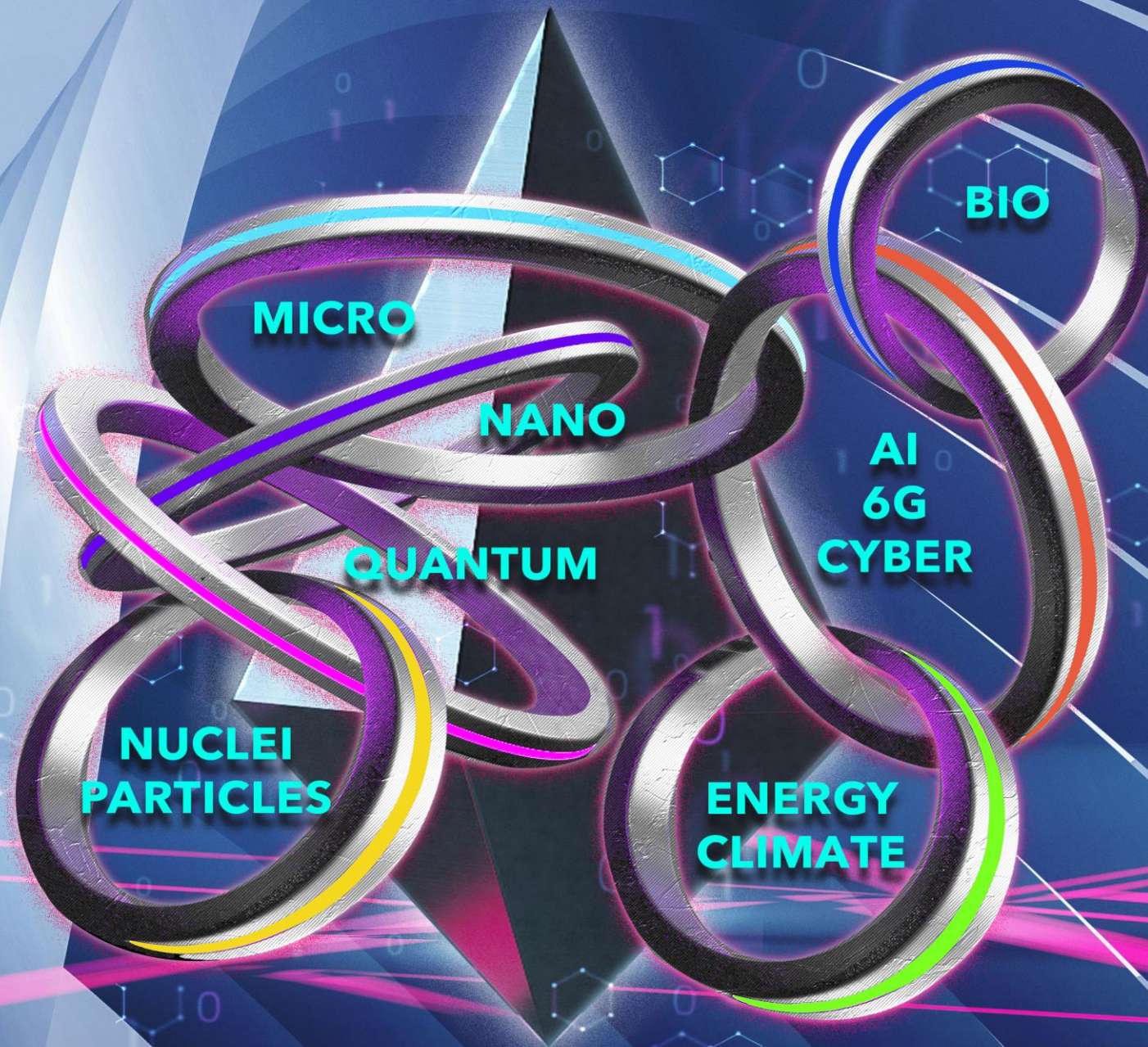
700
Scientific Personnel

300
Administrative
Technical
Support Personnel





DEMOKRITOS



The Institute of Quantum Computing & Quantum Technology

A draft proposal

December 2021

Institute of Quantum Computing & Quantum Technology

New Building:
2.8 million Euros



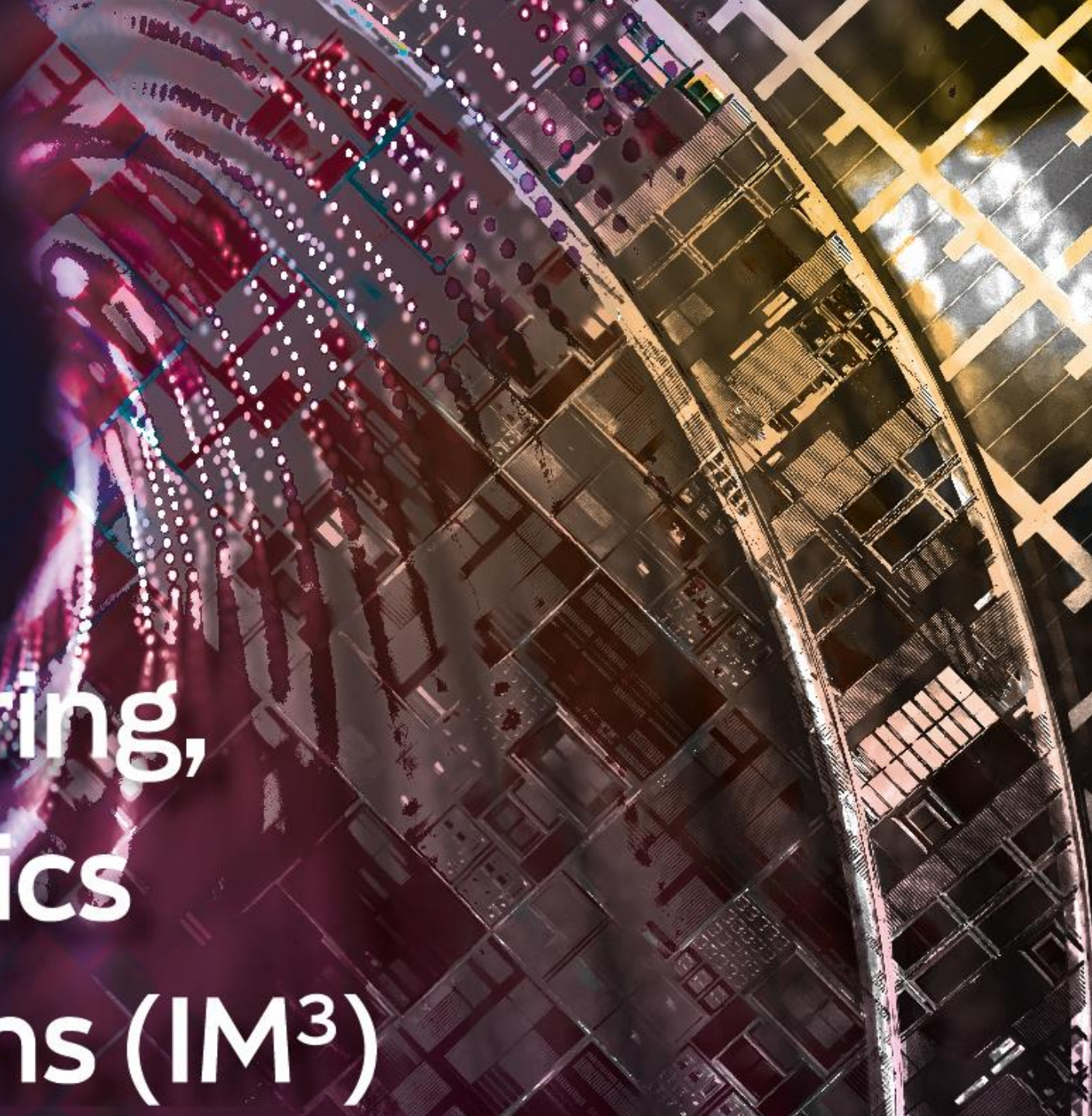
ΔΗ
ΜΟ
ΚΡΙ
ΤΟΣ



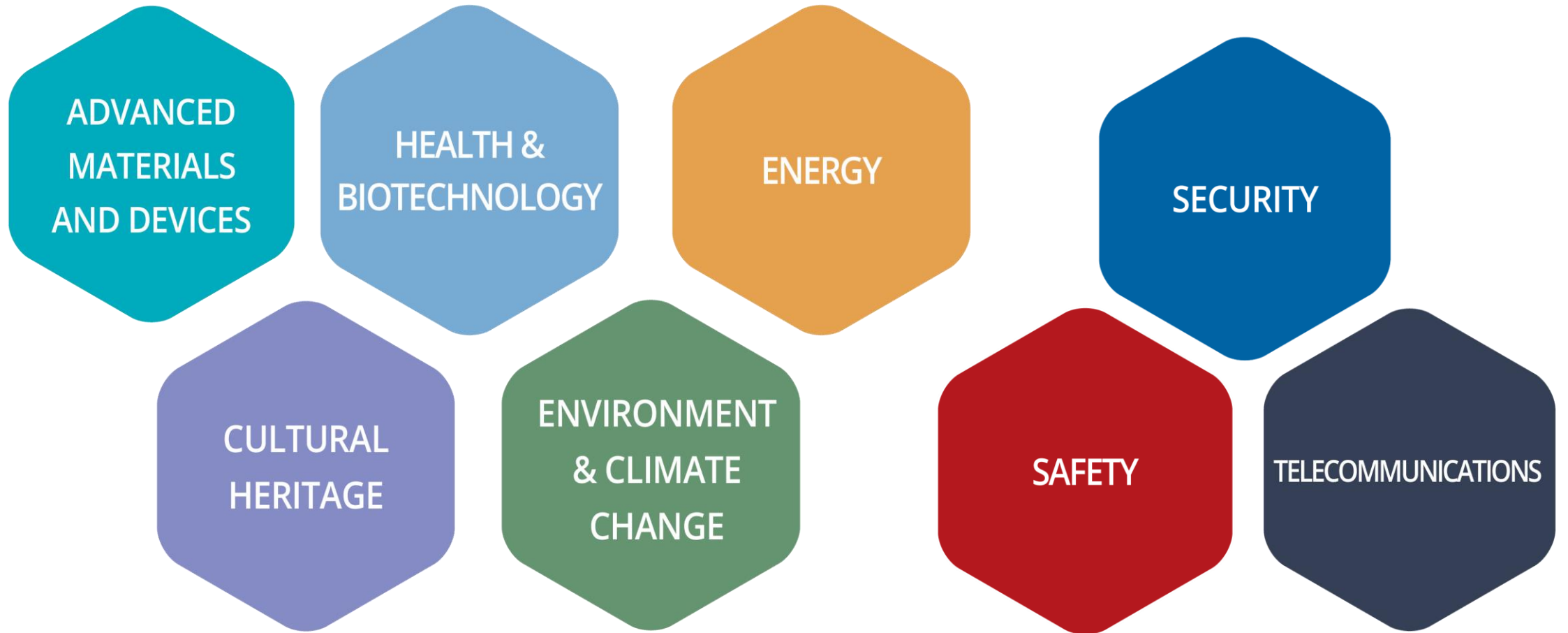
Ready for the 7th

DEMOKRITOS

Institute of Microengineering, Microelectronics & Microsystems (IM³)



The Fields of Applications



Graduate Education

- Over 1000 PhD Theses have been completed in the Research Laboratories of the Centre
- Graduate Programs are in operation in Collaboration with Universities worldwide



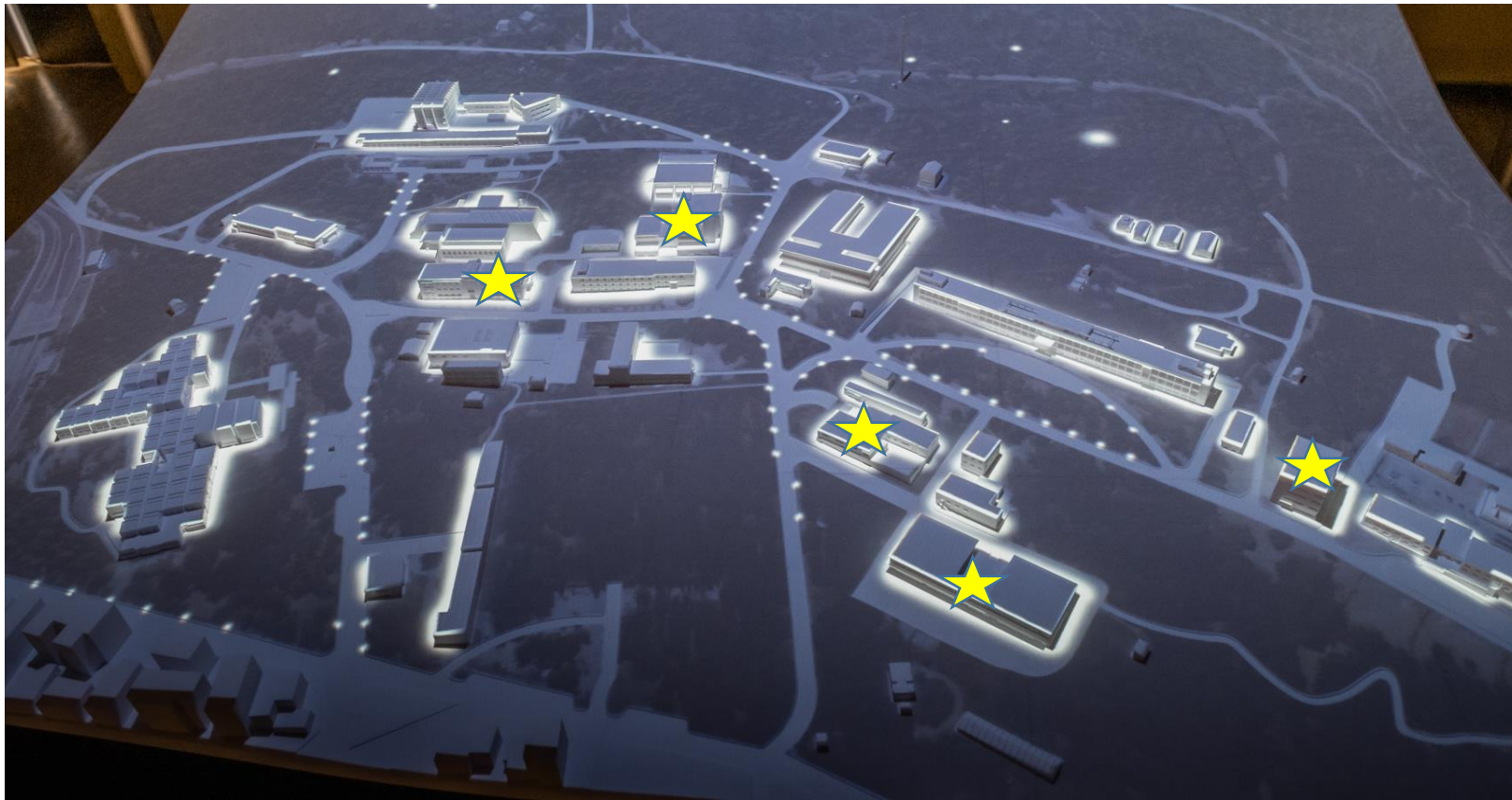


**European
Investment
Bank**

The EU bank

A circular arrangement of twelve five-pointed stars, representing the flag of the European Union.

NCSR Demokritos Infrastructure Expansion
Project, 48.33 mil. Euros



Institute of Nuclear & Particle Physics

INPP is a unique research Institute in Greece in the fields of Nuclear and Particle Physics.

INPP is a, predominantly, fundamental research institution, with activities focused on the areas of High Energy Particle Physics (HEP), Nuclear Physics (NP) and Astroparticle Physics (APP), with experimental and theoretical activities in these main research areas.

The main mission of INPP is to carry out world class experimental and theoretical research, achieve and retain scientific excellence and support innovation in High-Energy Physics, Nuclear Physics and Astroparticle Physics as well as their applications .



Personnel

17 Permanent/tenure track researchers

6 Staff scientists and technicians

2 Administrative personnel

1 Support personnel

6 research associates

24 Ph.D. candidates

19 Master and Undergraduate students

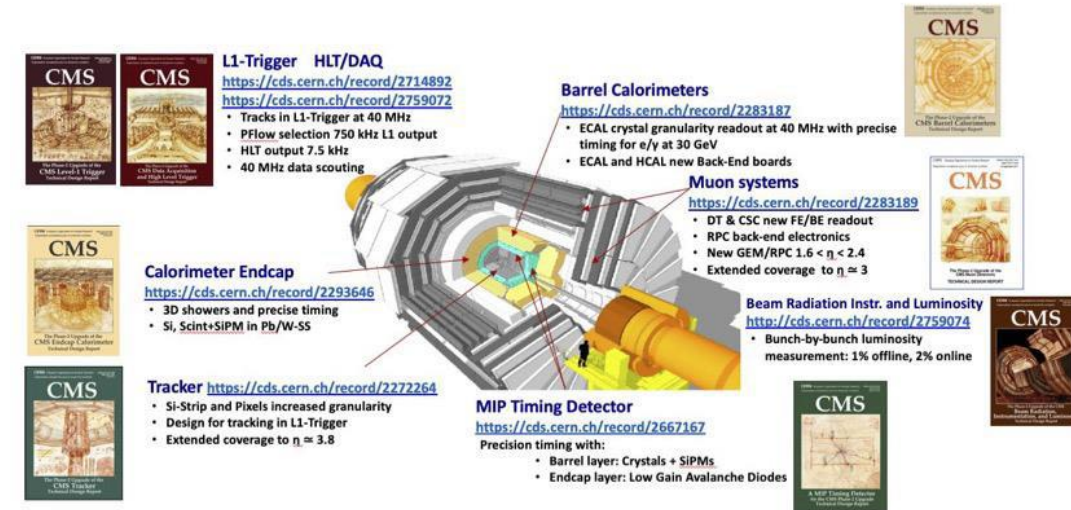


Experimental High Energy Physics – CMS

Part of the CMS in LHC since the inception of the experiment in the 1990s.

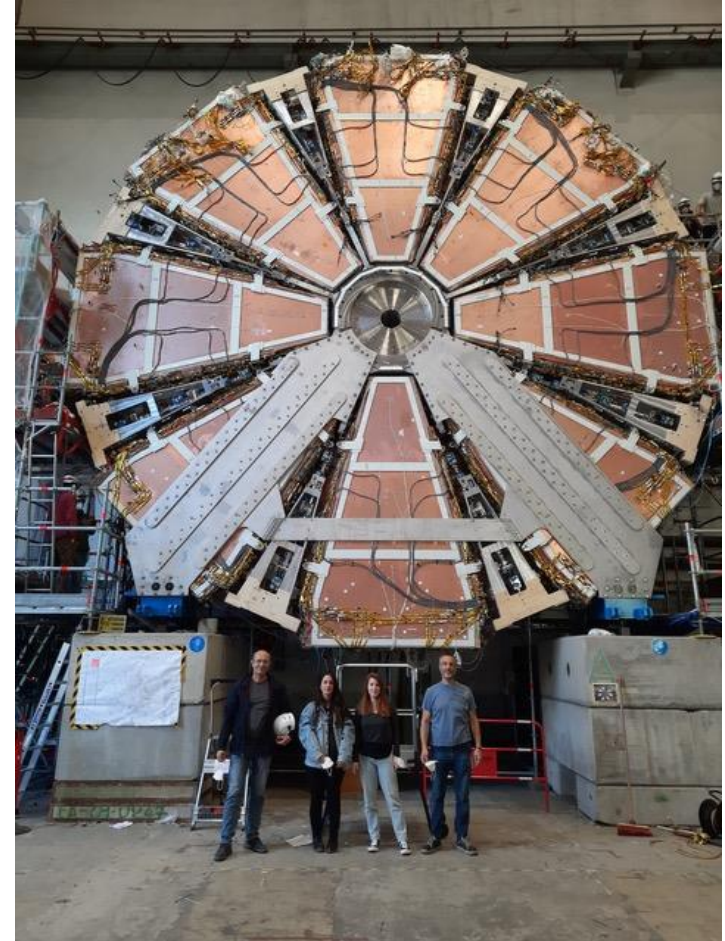
Development of the Si modules of the CMS Preshower of ECAL calorimeter, the global CMS trigger emulator project and numerous physics analyses.

Since 2016, part of the Tracker Silicon project in view of the Phase II upgrade of the CMS detector: development of the silicon sensors, the Data Acquisition System and the evaluation of the front-end electronics.



Experimental High Energy Physics – ATLAS

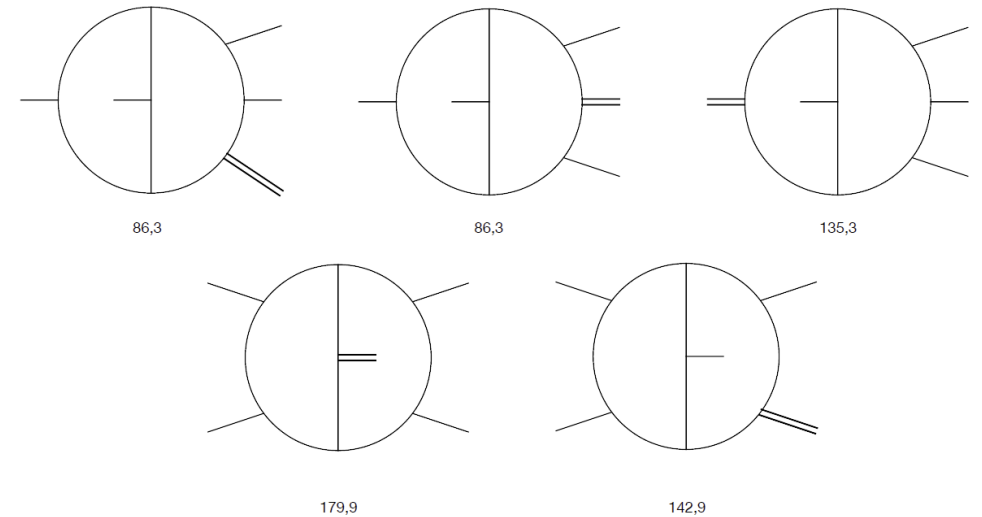
Contribution to the upgrade of the ATLAS detector, and in particular the New Small Wheel (NSW) end-cap muon detector. Heavy involvement in the construction of electronics for the Trigger and the DAQ, the installation of the detector and substantial responsibilities related to Muon software Coordination and the sTGC Trigger Commissioning coordination.



Theoretical High Energy Physics

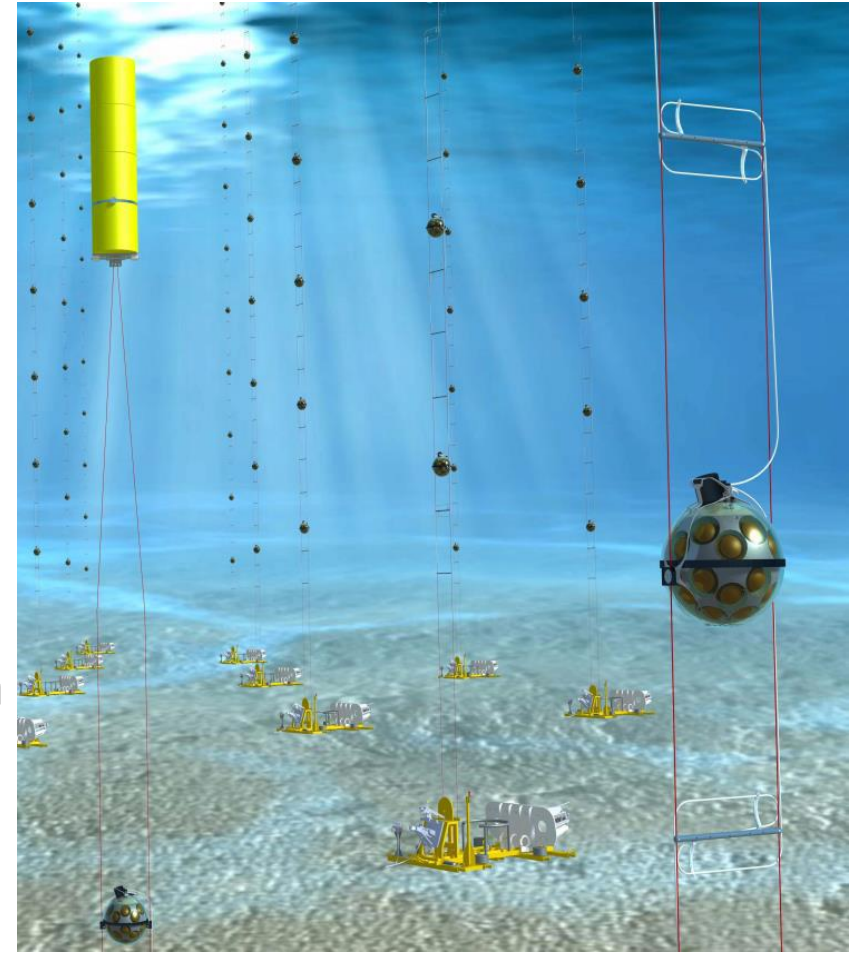
A very broad set of research topics ranging from Quantum Field Theory, to Scattering amplitudes and Particle Physics Phenomenology, String theory and Quantum Gravity, Non-Linear Chaotic Dynamics and Complex systems, Cosmology and Quantum Computation and information theory.

Strong ties with the our experimentalists.



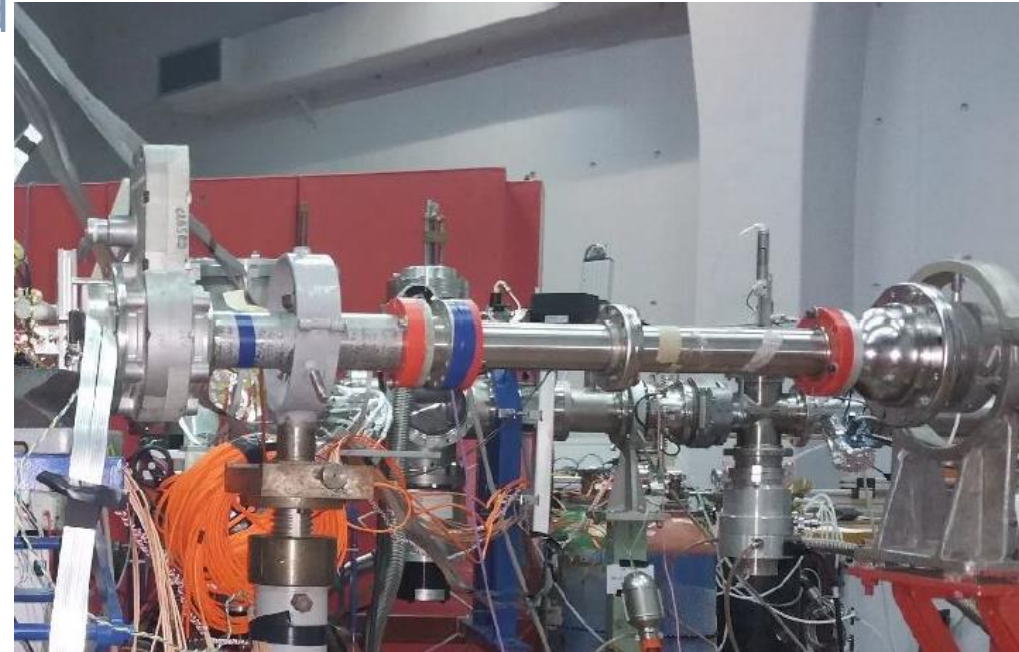
Astroparticle Physics

The group is part of the KM3NeT collaboration building a network of underwater neutrino telescopes in the Mediterranean Sea. Development, construction, testing and validation of detector components, data collection and data analysis. The INPP hosts a lab of assembly, testing and calibration of Digital Optical Modules. Active program for the development of novel neutrino detection techniques, and synergies with Geo- and marine scientists and expansion of the experimental program. Active participation to Hyper-K in Japan and ANNIE in Fermilab.



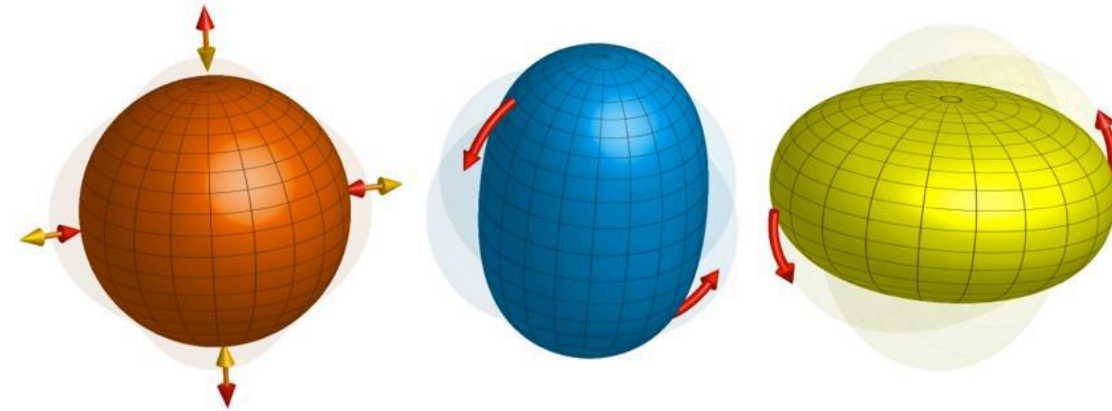
Nuclear Physics and Applications

Experimental studies on nuclear astrophysics and nuclear structure, interactions of ion beams and X-rays with matter. Key infrastructure are the Tandem Accelerator (TAL) and XRF Laboratory. Interdisciplinary applications with interest in emerging technologies, cultural heritage, environmental monitoring, human health, etc. The XRF lab provides technology transfer and on-site analytical services at museums, archaeological sites, etc. Joint research with national and European collaborators. TAL undergoes a major upgrade under the CALIBRA project, with a PET Cyclotron and an AMS just being added to the infrastructure



Theoretical Nuclear Physics

The Nuclear Theory Group focuses on the study of nuclear structure, and has been the pioneers of the **proxy-SU(3) symmetry**, for calculating the properties of medium mass and heavy Nuclei away from closed shells.



The proxy-SU(3) symmetry has recently produced **important, parameter-independent** predictions on the occurrence of **shape coexistence** and has triggered experimental proposals for its verification.





Welcome to PIC2024

Christos Markou

On behalf of the International Advisory Committee and the
Organizing Committee





International Advisory Committee

Roy A. Briere (Carnegie Mellon University, Pittsburgh, PA, U.S.)
Jean-Marie Brom (European Scientific Institute, Strasbourg, France)
Pao-Ti Chang (National Taiwan University, Taipei, Taiwan)
Su Dong (Stanford Linear Accelerator Center, Menlo Park, CA, U.S.)
Elisabetta Gallo (DESY, Hamburg, Germany)
Ulrich Heintz (Brown University, Providence, RI, U.S.)
Sonia Kabana (Universidad de Tarapaca, Arica, Chile)
Shaaban Khalil (Zewail City of Science, Technology and Innovation, Egypt)
Soo-Bong Kim (Seoul National University, Seoul, Korea)
Michal Krepes (University of Warwick, Coventry, UK)
Livia Ludhova (Research Center Jülich and RWTH Aachen University, Germany)

Michal Marcisovsky (Academy of Sciences of the Czech Republic)
Christos Markou (NCSR Demokritos, Athens, Greece)
Thomas Müller (Karlsruhe Institut of Technology, Germany)
Revaz Shanidze (Tbilisi State University, Georgia)
Xiaoyan Shen (Institute of High Energy Physics, Beijing, China)
Achim Stahl (RWTH Aachen University, Aachen, Germany)
Bernd Stelzer (Simon Fraser University and TRIUMF, British Columbia, Canada)
Yutaka Ushiroda (KEK High Energy Accelerator Research Organization, Tsukuba, Japan)
Rüdiger Voss (CERN, Geneva, Switzerland)
Yuji Yamazaki (Kobe University, Japan)





Organizing Committee

Evangelia Drakopoulou (NCSR Demokritos, Athens, Greece)
Georgios Daskalakis (NCSR Demokritos, Athens, Greece)
Leonidas Kalousis (NCSR Demokritos, Athens, Greece)
Anastasios Lagoyannis (NCSR Demokritos, Athens, Greece)
Christos Markou (NCSR Demokritos, Athens, Greece) (Chair)
Andreas Psallidas (NCSR Demokritos, Athens, Greece)
Ekaterini Tzamariudaki (NCSR Demokritos, Athens, Greece)





The PIC2024 program can be found in <https://indico.cern.ch/event/1414470/timetable/#all.detailed>

All plenary sessions in the Main Amphitheater and <https://us02web.zoom.us/j/84324186068>

Parallel sessions in Main Amphitheater and <https://us02web.zoom.us/j/84324186068>

Mini Conference Hall and <https://us02web.zoom.us/j/83584205236>

Seminar room, INPP and <https://us02web.zoom.us/j/88004570873>

Remote listening will be possible for interested colleagues. Limited privileges.



43rd International Symposium on Physics in Collision

PIC 2024

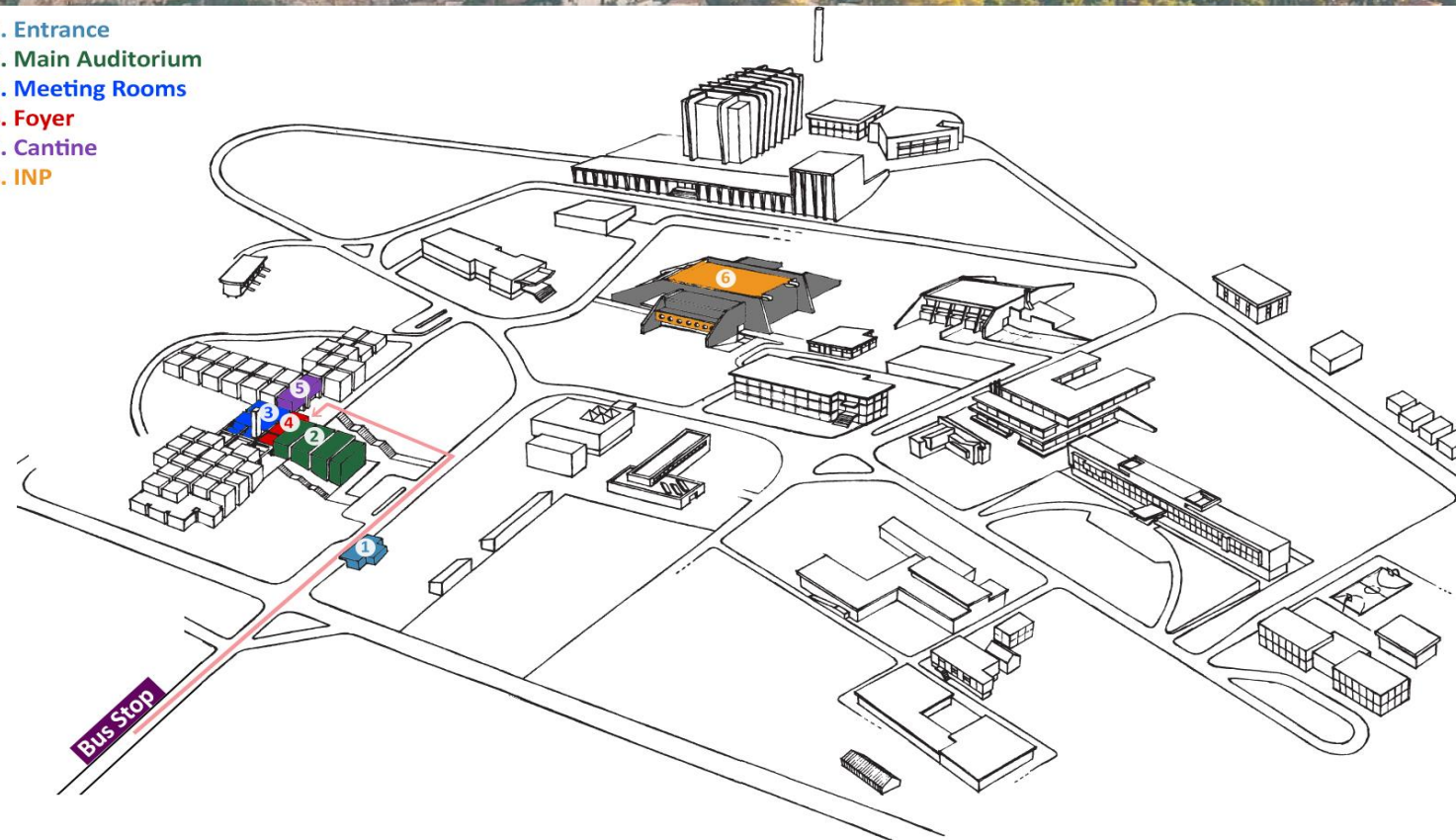


22-25 October 2024

NCSR "Demokritos", Athens, Greece



- 1. Entrance
- 2. Main Auditorium
- 3. Meeting Rooms
- 4. Foyer
- 5. Cantine
- 6. INP





Social events

Tuesday 22/10 - Welcome drink after the last presentation (18:20 ?) at the Foyer

Wednesday 23/10- Conference Dinner at the Vasilainas Restaurant (starting at 20:30)

Thursday 24/10 - Public Lecture by Dr. George Manginis, Academic Director of the Benaki Museum

Thursday 24/10 - Guided tour of the Acropolis Archaeological Site and the Acropolis Museum
(a ~4.5 hour tour starting at 15:30)





If needed, please contact

Christos Markou

cmarkou@inp.demokritos.gr

+30 6977 321481





Thank you for joining PIC2024 in NCSR Demokritos!

Enjoy your stay in Athens!

