

Institute for the Physics of the Universe



Institut
Physique de
l'Univers

Aix*Marseille Université

Strategy for the next 5 years
Main goals for next year
Some final remarks



Strategy for the next 5 years

Research

- Successful operation of international projects IPhU teams are involved:
e.g. ATLAS, LHCb, Belle-II, EUCLID, LSST, CTA, SVOM/COLIBRI, KM3NeT, etc...
their successful scientific exploitation is naturally a top priority
- Prepare for the next ones (e.g. post-LHC, E-ELT, LISA, ...) and trigger new ideas/projects

Education

- New « Instrument Scientist » curriculum: start in 2022 w/ TIGER & HCERES confirmation in 2024
- Deployment of the « Physics of the Universe » PhD Program
- Transverse data science: in particular, related to HPC, HTC, Deep Learning, and Quantum Computing
- Increase Attractiveness of Marseille: incoming grants, creative force and actor of improving reception of students, develop a sense of belonging in the Graduate School,...
- Digital Campus to alleviate distance between the Château-Gombert and Luminy Campuses
- Yearly Organization of a summer school for undergraduates and one for Master/PhD students (w/ CIVIS?)
- Send students to CERN and ESO at the time of their summer schools (work on an agreement?)
- Aim for an Erasmus Mundus

Links to socio-economic and cultural sectors

- T80 et T120 (@OHP), IRiS, ePERON (+radio-telescope?) –
develop an international network (Mexico, IPPOG, master classes,...)
- Partnerships w/ companies for common developments (Lynred, Intel, Nexvision, Thalès, Winlight,...)
- Make the Innovation Cell fully operational: creativity development workshops, support to inventors (training, coaching, incentive funding,...),...

Global

- Sustain the visibility and positioning of IPhU
- Apply to Calls at the Local, Regional, National and European levels (only hope for postdoc funding?)

Main goals for next year

make the institute settle down and engage the 5-yr roadmap

Global

- Increase visibility and positioning of IPhU – Finalization of web pages, collaborative tools,... and start presence on social networks.
- Explore possibilities w/ CIVIS

Research

- To trigger new ideas, collaboration and projects: organization by Science WGs of thematic days on transverse themes likely to interest all 3 labs : e.g. DM, GW, BSM, Neutrinos
- Reinforce IPhU teams participation to LSST and KM3NeT
- Co-supervision and co-funding of a thesis with Mexico on SVOM/Colibri
- Support collaborative projects (including the hiring of a PhD student, if funding permits) on DM, Cosmological surveys, Lepton Flavor Universality in B decays

Education

- Get the TIGER label this year for the Master FunPhys (for implementation in 2 phases: 2021 and 2022)
- Get the TIGER label this year for research platforms that we also use for teaching/training
- Bring the Graduate School program up to speed (Master and Doctorate)
- If Covid permits, organize a Summer/Winter School

Links to socio-economic and cultural sectors

- Participate w/ IRiS to the “Noche de las estrellas” in Novembre (Mexico)
- Deploy in production mode access through the web of ePERON data
- Set up and sign agreement with the rectorate (involvement in IRiS and ePERON activities)
- Finish to set up the Innovation Cell: raise awareness of our colleagues, develop communication and links w/ the different actors. 1 innovative project could be supported already this year with incentive funding

- The relevance of fundamental research should not be underestimated in the equation even when one wants to address global societal challenges. Most of the innovations with a large impact on our daily lives have emerged from there.
- Support of IPhU Graduate School by TIGER is of paramount importance to reinforce:
 - Links with research teams
 - International attractiveness and standing
 - Links with the socio-economic sector
 - Use of some of our research platforms for training
- Support to implementation of “Instrument Scientist” curriculum in AMU Master of Physics program:
 - coherent and wide range of teachings and trainings related to the Physics of the Universe, from theory to scientific infrastructures
 - stronger links with the socio-economic sector.
 - Large instruments are important part of activities at CPPM & LAM: vital for them in the long run
- One of the major goals of the collaborative environment that the institute allows to sustain: be more efficient together in applying to Calls at the Local, Regional, National and European levels
- But, stable funding remains necessary to IPhU to make possible steady and consistent implementation of its roadmap in Research, Education and Transfer
 - estimated level 800-830k€/yr (510k€ direct & 320k€ thru TIGER) - Reminder: OCEVU=1.2M€/yr
- **If budget turns out not to be up to our expectations: will need your advice to readjust our roadmap**