



ESIPAP :

European School of Instrumentation in Particle and astroparticle Physics

Johann Collot (LPSC/UJF)

Lucia di Ciaccio (LAPP/UdS)

Elsa Merle-Lucotte (LPSC/INPG)

Éric Chabert (IPHC/U. de Strasbourg)

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ESIPAP



- Regional observation :
 - we miss a few students per year highly-educated in HEP and astroparticle instrumentation
 - local yearly recruitment rate ($\sim 2-4 \text{ y}^{-1}$) does not let the possibility to create dedicated Masters
- Explored solution :
 - follow the JUAS model in Archamps (created in 90's)
 - add options in regional (French and European) Masters and factorize at the European level
 - first recruitment campaign : 2013-2014

ESIPAP : organization

- Organization and management given to ESI that already organizes JUAS
- 1 director + Steering + Organizing committees
- 2 modules : 20 January to 15 March : 8 weeks
- 15-20 students per year at European level (not the first year)
- Master students, Ph.D. students and Professional training
- ~100 h / module
- all lectures are evaluated - 16 ECTS (2 x 8)
- Accommodation of students organized by ESI

ESIPAP : programme

- Module 1 : Physics of particle & astroparticle detectors :
 - Introduction to experimental particle physics
 - Introduction to experimental astroparticle physics
 - Interaction of particles with matter
 - Statistical and stochastic aspects
 - Detector Simulation
 - Calorimetry
 - Tracking
 - Muon detection
 - Particle Identification
 - Imaging & Cherenkov detectors
 - Radioprotection
 - Lab sessions at CERN
 - Computing sessions at ESI
- Module 2 : Technologies and applications :
 - Detector Technologies
 - Advanced Electronics
 - Advanced Mechanics and new materials
 - Magnets for particle detectors
 - Triggering and Data acquisition
 - Advanced computing
 - Low energy and nuclear applications
 - Medical applications
 - Specific aspects for space projects
 - Lab sessions at CERN
 - Computing sessions at ESI

Information

- www.cern.ch/esipap
- dates : module 1 20/01 to 15/02
module 2 17/02 to 15/03
- 200 €/module (accommodation included)
- Student admission is ongoing (please forward the announcement to your colleagues, friends and students)

ESIPAP : Participations & budget

- The creation agreement between CNRS and ESI is signed (3+2 years)
- University of Grenoble-Alpes : UJF, INPG and UdS
- University of Strasbourg (agreement signed)
- LPSC, LAPP, IPHC.
- CERN : good contacts have been established
- University Pierre and Marie Curie of Paris, University of Lyon : under discussion
- IPNL, LPNHE ?
- more European partners
- Annual initial budget : 70 k€ (50% ENIGMASS, ESI, Archamps Technopole, Haute-Savoie council ...)

Conclusion

- ESIPAP is created for 5 years at least, thanks to ENIGMASS, ESI, Technopole of Archamps and Haute-Savoie council ;
- Student admission is open ([please advertise](#))
- Lecturer recruitment is also open ([please contact us](#) if you are interested as there's lots to do : lectures, tutorials and lab sessions)
- Seek partnership with more European universities & labs.