esi
European Scientific Institute

Enigmass

esipap
European School of Instrumentation
in Particle & Astroparticle Physics

since 2014

UNIVERSITÉ Grenoble Alpes

Grenoble INP

UNIVERSITÉ DE STRASBOURG

筑波大学
University of Tsukuba

CERN

cnrs IN2P3
Les deux infinis

Lecturers, lab tutors & organizers

LAPP Annecy : M Delmastro, L Di Ciaccio, R Gouaty

ESI Archamps : M Gauthier, H Hoffmann, R Holland, Y Lemoigne, S Vandergooten

LBNL Berkeley : E Anderssen

CERN : P Bonnal, F Boyer, M Centis Vignali, D Dannheim, R Guida, C Holmkvist, J Kroeger, B Mandelli, I Mateu, M Moll, M Munker, A Pace, W Pokorski, S Ponce, A Ribon, H Sakulin, E Sicking, H Ten Kate, G Unal, T Vanat, H Vincke

ILL Grenoble : U Köster

Institut Néel Grenoble : M Calvo, F Lévy-Bertrand, A Monfardini

LPSC Grenoble : C Biscarat, J Collot, L Ferraris-Bouchez, J-Y Hostachy, J Macias-Perez, E Merle, F Montanet, J Odier, G Pignol, M. Yamouni

TIMA Grenoble : D Dzahini

U of London : F Pastore

CPPM Marseille : Y Coadou, C Morel

Ariane Group Paris : I Rongier

CNES Paris : Y Droz

LLR Palaiseau : C Ochando

Sapienza U & INFN Roma : E Pasqualucci

IRFU CEA Saclay : L Chevalier

IPHC Strasbourg : J Baudot, J-M Brom, E Chabert, E Conte, M Krauth

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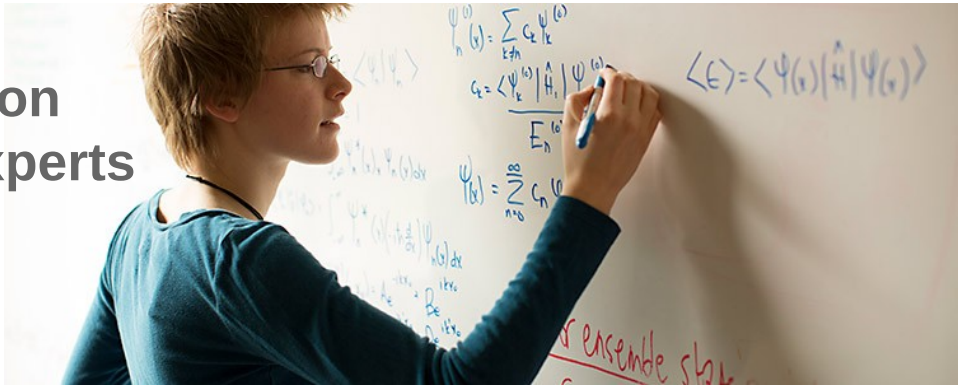
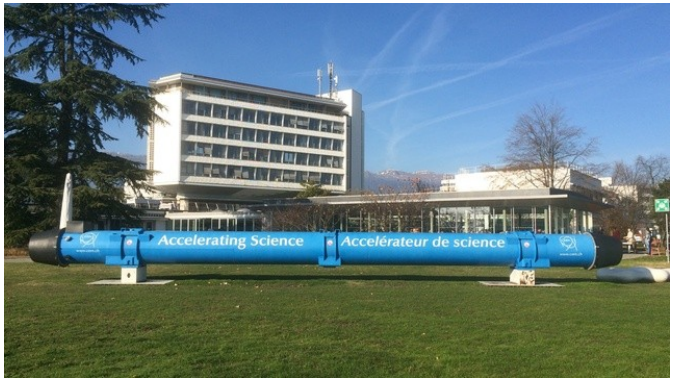
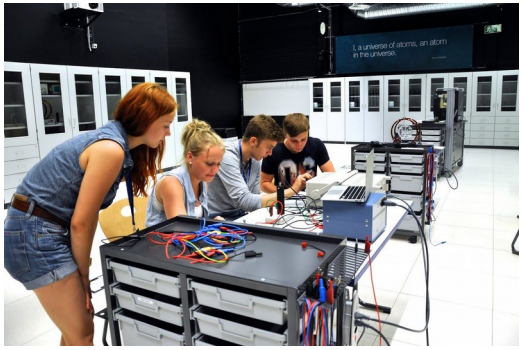
Training / Teaching

While theoretical physics might be taught in any place worldwide



Training/teaching in instrumentation requires resources and leading experts that are more easily found next to world labs





ESIPAP since 2014

One of the reference schools in HEP instrumentation, next to CERN.

Training of the next generation of young physicists who will carry out HL-LHC upgrades, major experimental projects in neutrino physics, astroparticle physics, cosmology and later on new collider projects.

Very broad & intensive, with real exams : possibility of ECTS

2 courses of 4 weeks each, that can be followed entirely or selectively by weeks

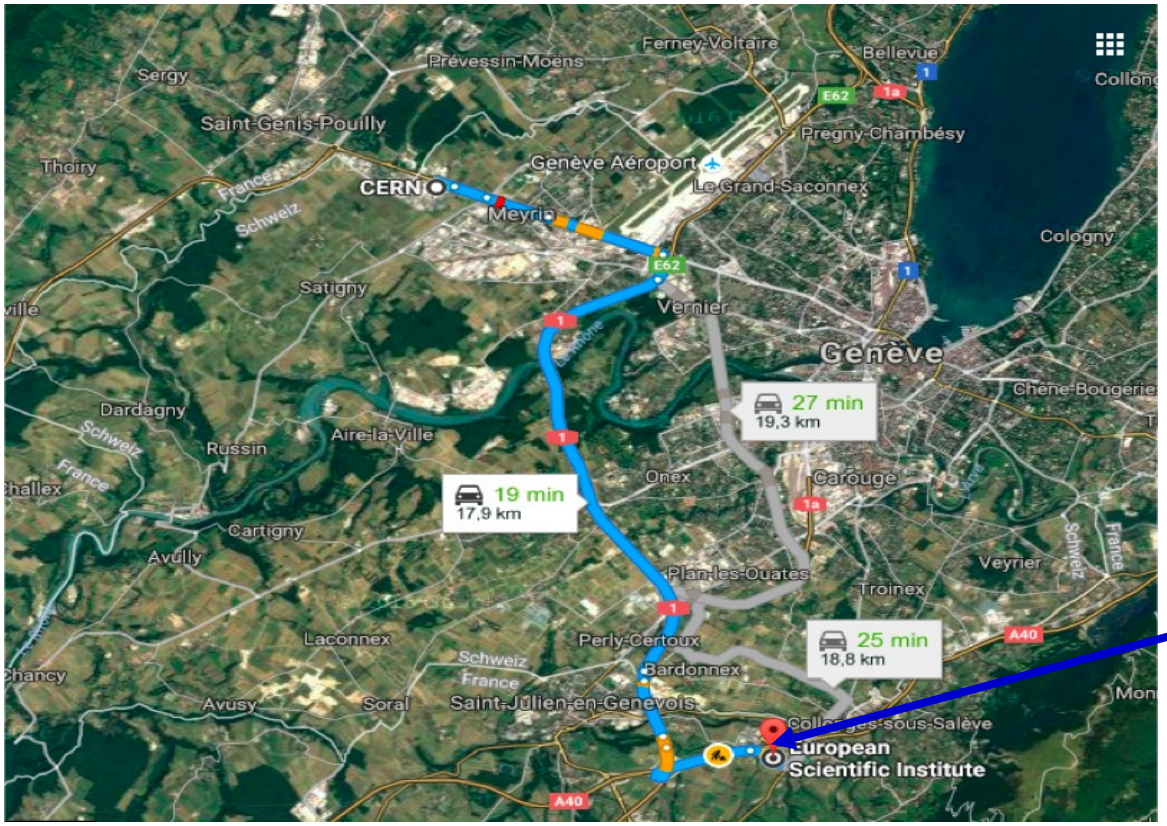
Selective international admission : 16 students for each course

Open to Master, PhD students and junior professionals

Reduced fees for students - Cost mostly supported by partners

Intense learning - Many practical sessions - Melting pot & cultural experience

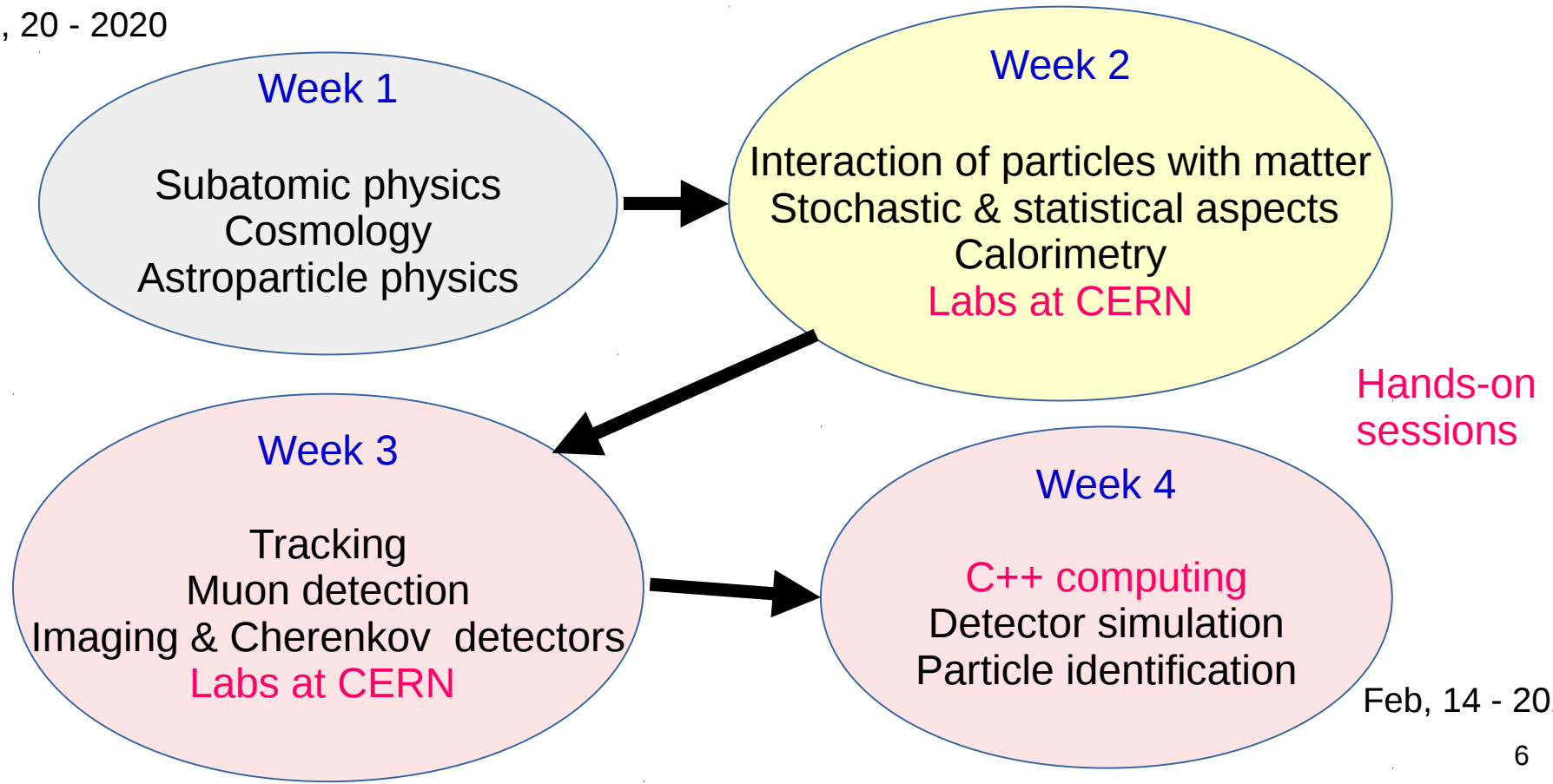
School location



Archamps Technopole

Course 1 : physics of particle and astroparticle detectors

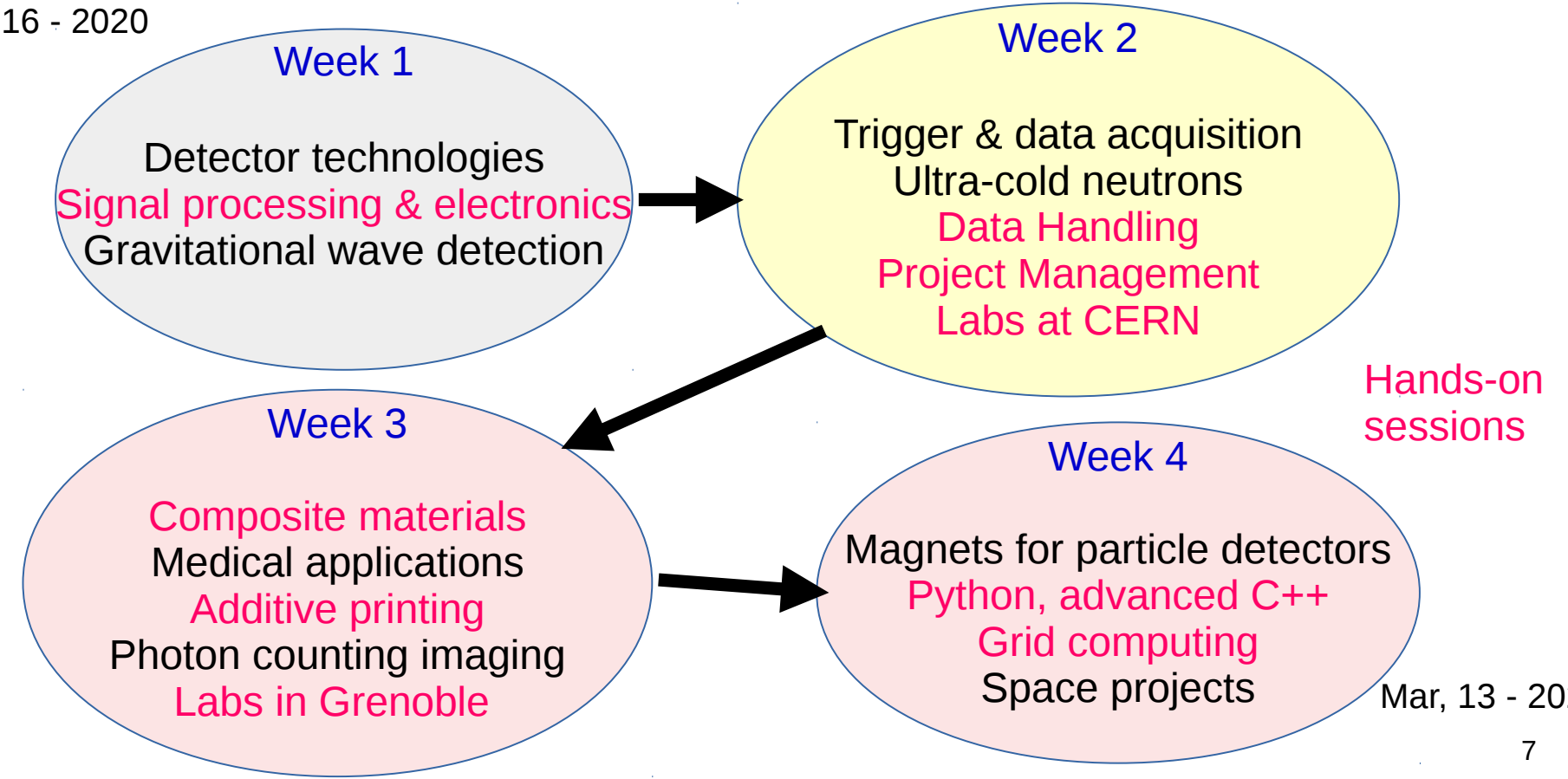
Jan, 20 - 2020



Feb, 14 - 2020

Course 2 : detector technologies & applications

Feb, 16 - 2020



Mar, 13 - 2020

Student Origin

Home countries (33 in total)
of ESIPAP alumni (84 till now)

Student diversity

84 alumni from 33 countries, 17 with limited access to HEP experimental facilities

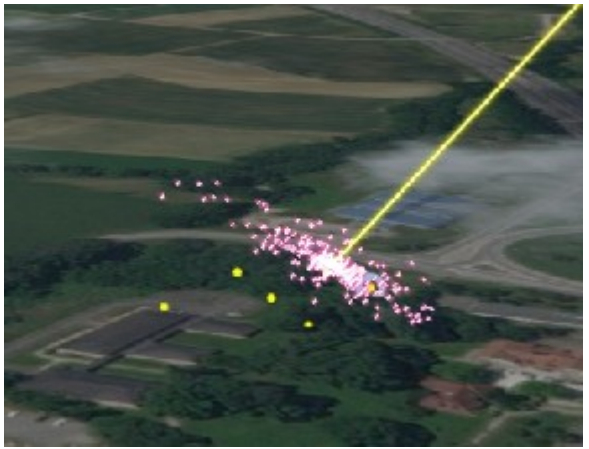
32 % women, 68 % men

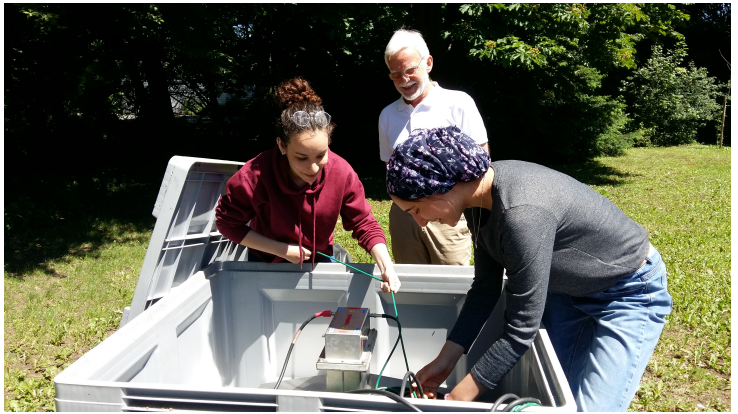
46 MS students, 36 PhD students, 1 pro , 1 BS student

Europe : 54 - Asia : 17 - Africa : 10 - America : 3

AHEAD
(a high-energy array detector)

- UHE neutrino air shower detector prototype decommissioned by helicopter and moved to ESI in Archamps
- Set of 5 cosmic stations
- Used as a lab setup





Testimony

A. Pingault PhD student in Gent

I was one of the lucky few that participated in the first ESIPAP edition in 2014. I included both modules as part of my master's degree in nuclear engineering from Grenoble-INP PHELMA. At that time I was already aiming to work in detector instrumentation but still unsure whether in the industry or the academy. Being surrounded by experts in their respective field for these two months helped me make my choice. **Shortly after finishing the school I got accepted for a PhD position in detector R&D for particle physics.**

The first module provided me with the background necessary to start working in my field. During the second module, I was able to discover and discuss technology and techniques I didn't even hear about before. Some of them I would use in my work afterwards. For this, lab sessions (all at CERN this year) were a major opportunity to get hands-on experience on state of the art technology.

The schedule of the school is dense! But, from our fellow international students to the quality of the teaching materials and interesting topics, the environment we are studying in makes it worthwhile. Lecturers are all experts in their respective field. Being able to interact directly with them in such conditions is a rare opportunity.

All in all, it was a superb first work experience in such international context. I would gladly urge anyone interested in detector instrumentation to attend the ESIPAP school.

Testimony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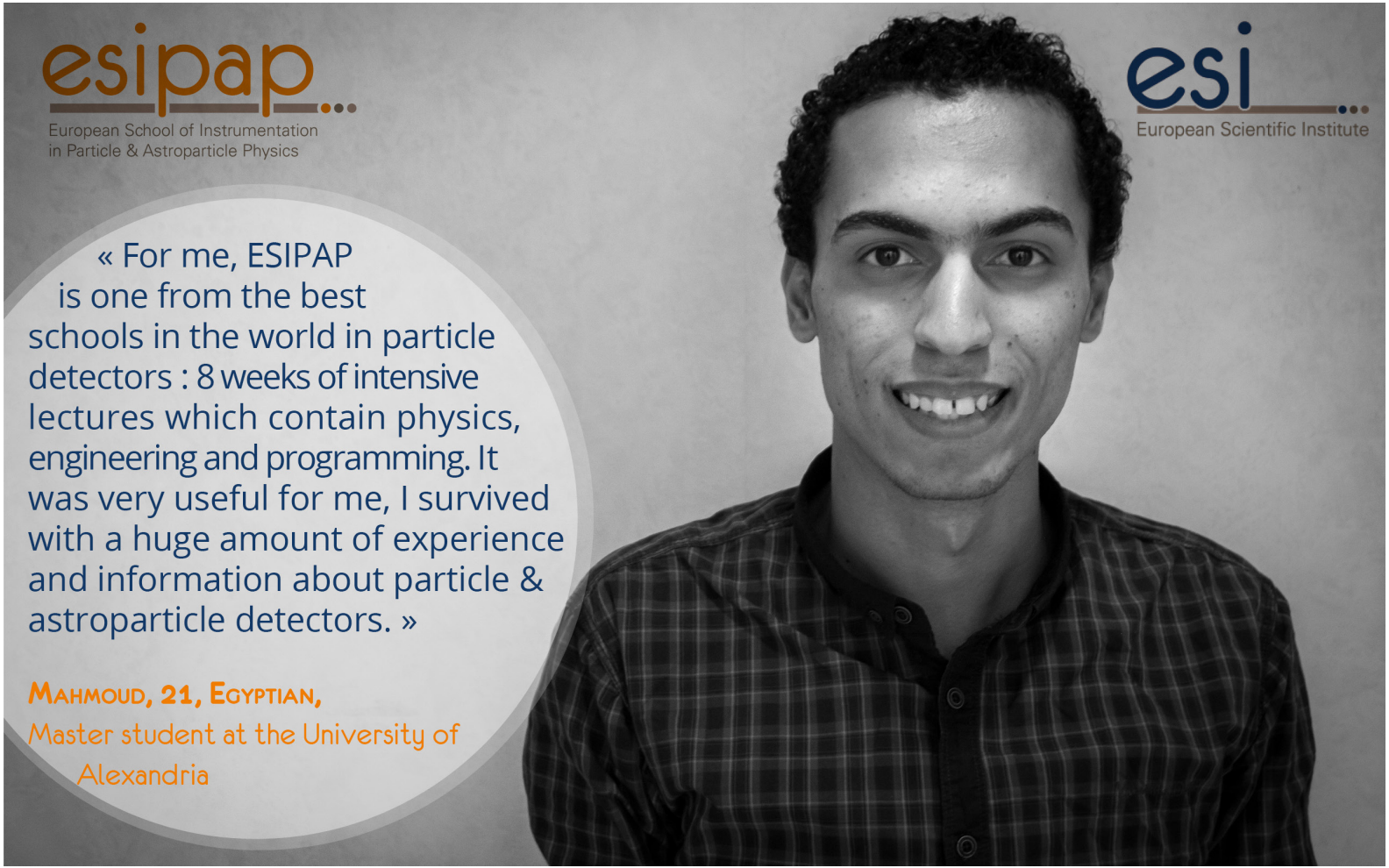
"Joining the intensive ESIPAP school is a great way to learn about most relevant topics related to detectors for particle and astroparticle physics while making international friends and broadening your network.."
SILKE, 25, GERMAN
Master student in Particle Physics
at the University of Göttingen

Testimony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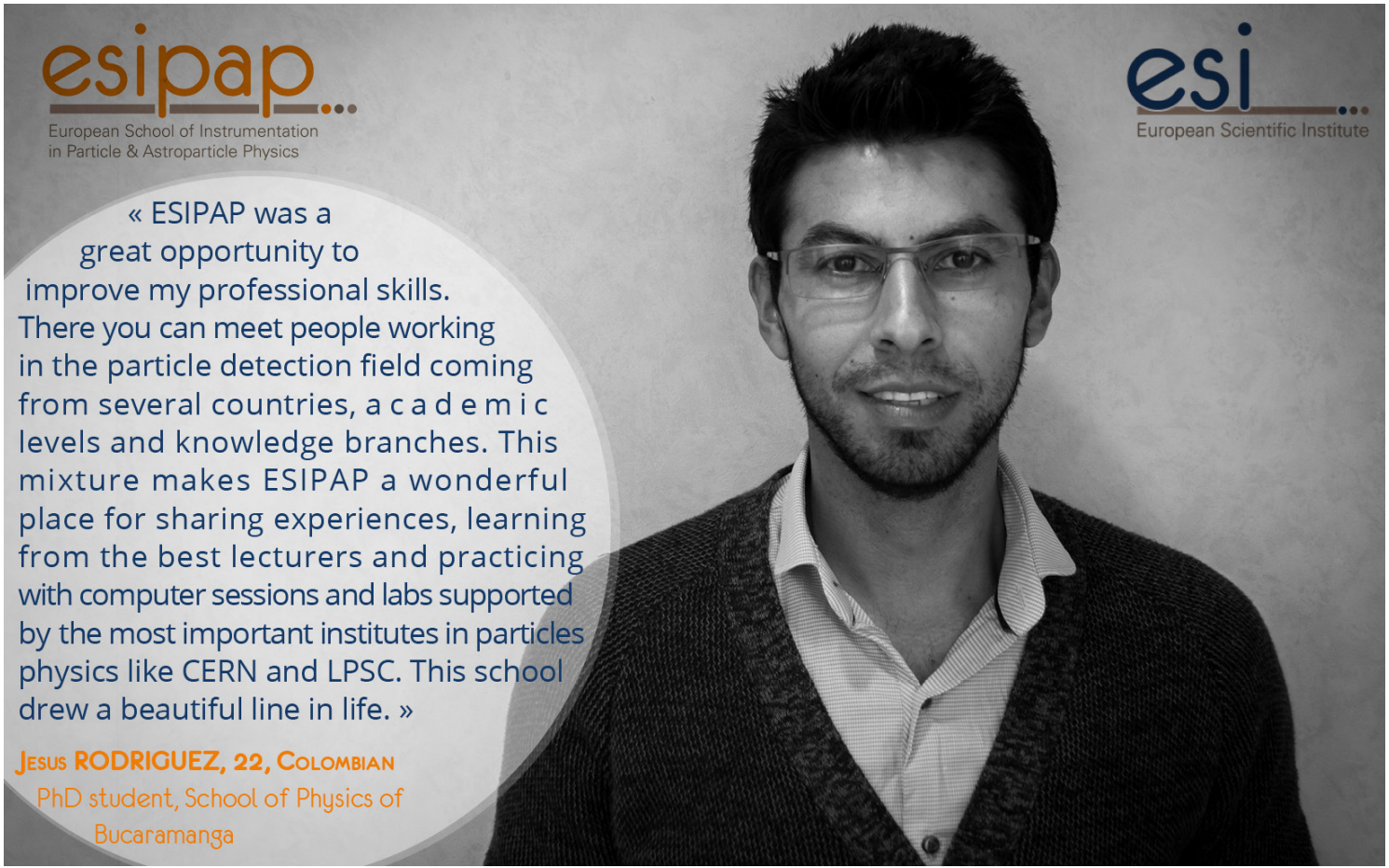
« For me, ESIPAP is one from the best schools in the world in particle detectors : 8 weeks of intensive lectures which contain physics, engineering and programming. It was very useful for me, I survived with a huge amount of experience and information about particle & astroparticle detectors. »
Mahmoud, 21, Egyptian,
Master student at the University of Alexandria

Testimony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« ESIPAP was a great opportunity to improve my professional skills. There you can meet people working in the particle detection field coming from several countries, academic levels and knowledge branches. This mixture makes ESIPAP a wonderful place for sharing experiences, learning from the best lecturers and practicing with computer sessions and labs supported by the most important institutes in particles physics like CERN and LPSC. This school drew a beautiful line in life. »
JESUS RODRIGUEZ, 22, COLOMBIAN
PhD student, School of Physics of Bucaramanga

Testimony


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« The modules are a perfect blend of theoretical and experimental aspects of detector technologies. Practical sessions of offline computing and labs at CERN were all fun. Here you get the opportunity to interact with experts and scientists that shapes your approach towards science and make you think out of the box. Attending ESIPAP was an opportunity to build a connection with international students and creating lifetime memories with awesome people. Thanks ESI for the opportunity! »
DIVYA SAINI, 24, INDIAN
Master student, MNIT Jaipur

ESIPAP in pictures

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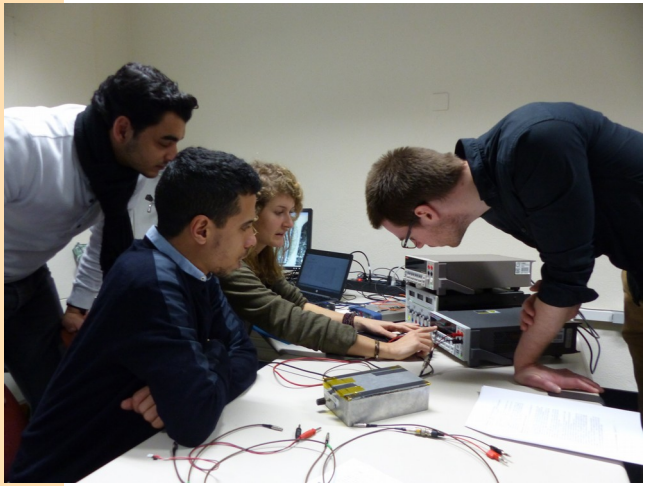
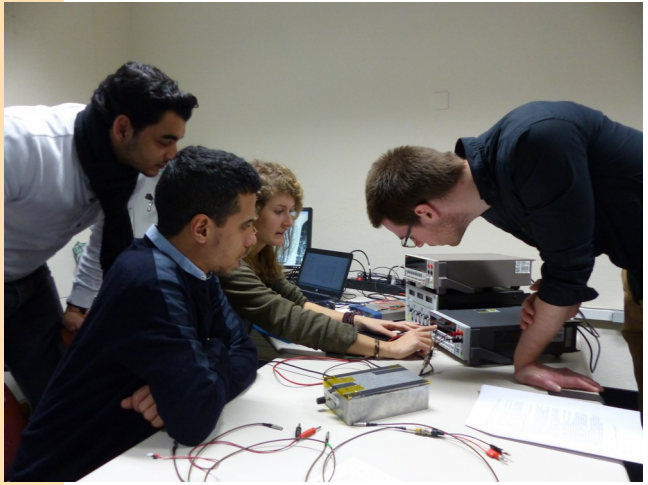
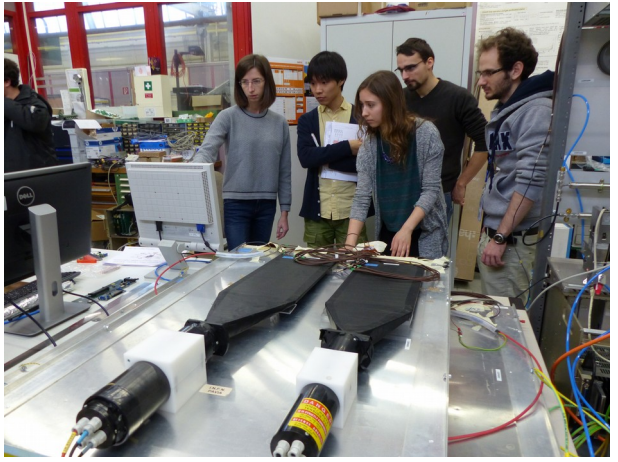


ESIPAP in pictures





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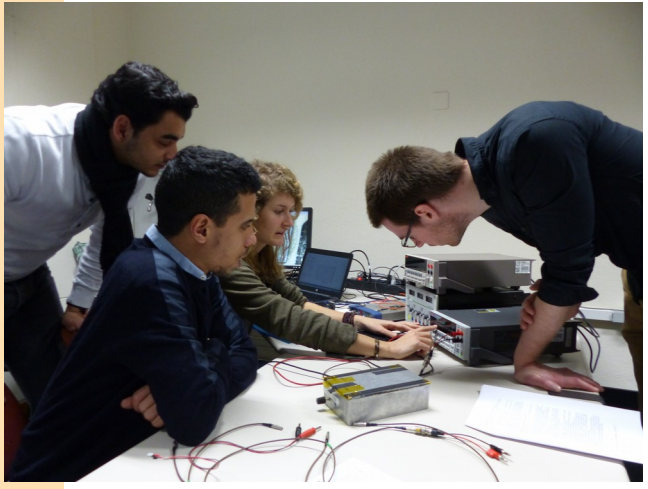

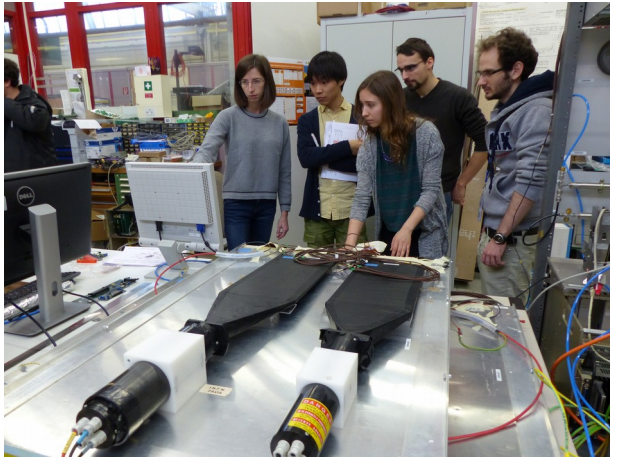

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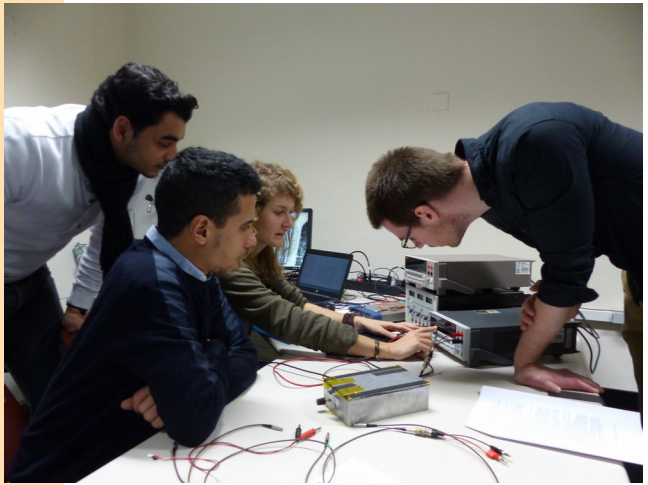

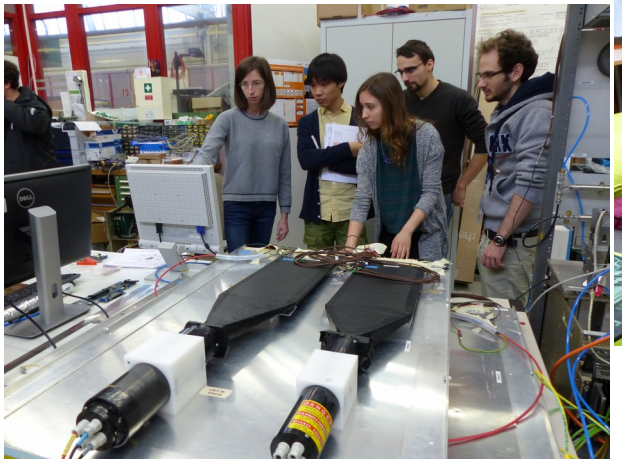

ESIPAP by the numbers

- 2 independent courses of 4 weeks each
- student capacity (for 2020) : 20 for course 1 , 16 for course 2
- lectures : 27
- lecturers : 34
- lecture hours : 174 h over 8 weeks
- lab tutors : 17
- labs : 1 @ ESI (AHEAD), 5 @ CERN , 2 in Grenoble, 4 computing labs (25 hours in total)
- exams : 11 + 4 lab reports
- overall budget : 80 k€ (1/2 from ENIGMASS , 1/8 from registration fees, 1/4 from local authorities, 1/8 from ESI)

Further information

Introductory video : https://youtu.be/f2ggf4P36cc

Contact : esipap@esi-archamps.eu

Next session : course 1 , 20 Jan. - 15 Feb. 2020
course 2 , 18 Feb. - 13 Mar. 2020

Registration : www.esipap.eu , starts 2 September 2019.

Twitter : @ESIArchamps

Facebook : www.facebook.com/ESIArchamps

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