esi
European Scientific Institute

Enigmass

esipap
European School of Instrumentation
in Particle & Astroparticle Physics

WELCOME TO ESIPAP 2018

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European School of Instrumentation in Particle & Astroparticle Physics

Objectives

To create THE reference school in HEP instrumentation in the vicinity of CERN, the focal point of our community (like JUAS for accelerators)

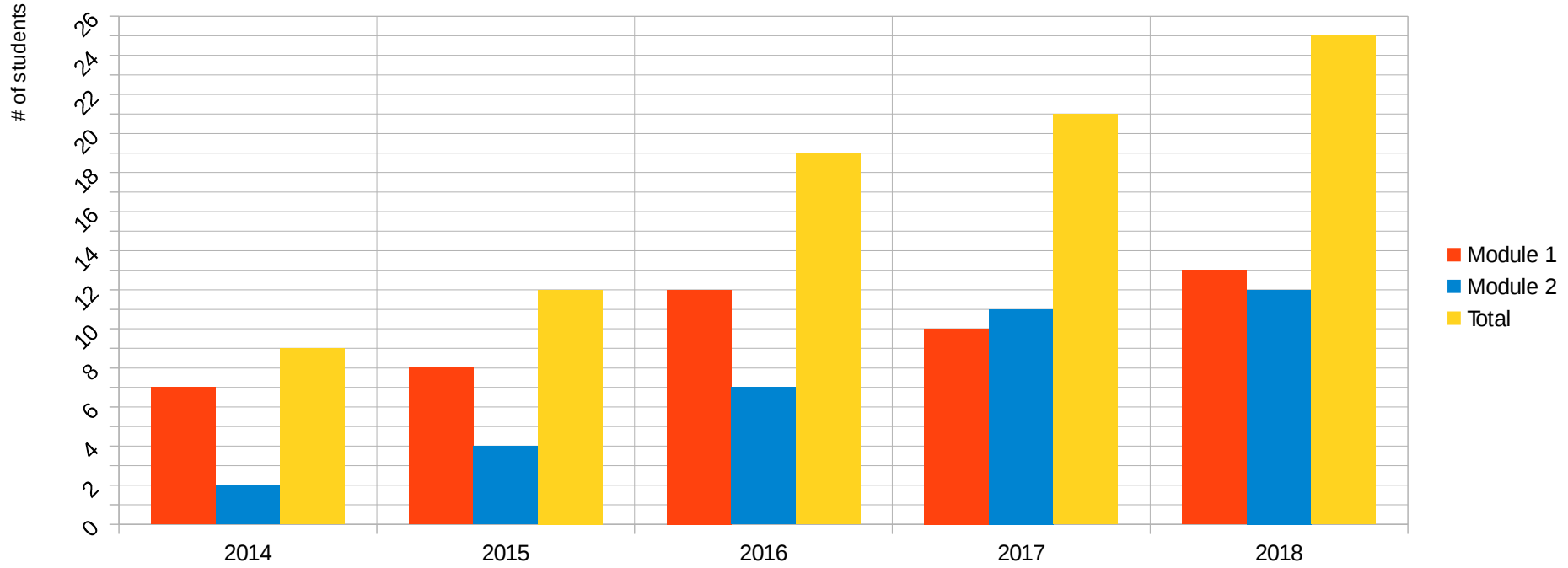
To prepare the next generation of young physicists who will carry out HL-LHC upgrades, major experimental programs in neutrino physics, astroparticle physics, cosmology, and later on new collider projects.

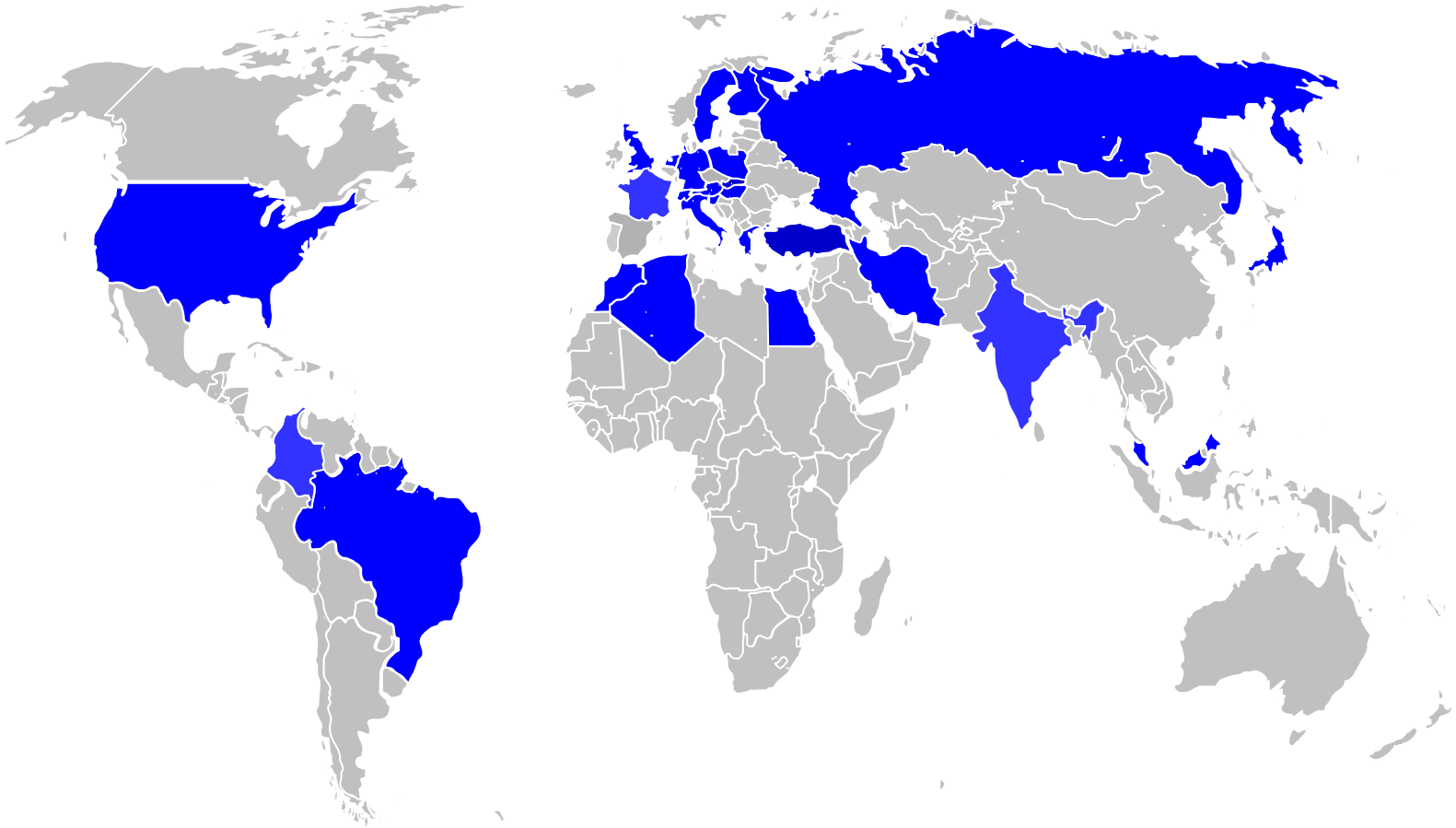
Very broad & intensive school with real exams : ECTS

5-year target : recruit 2 x 16 students per year at international level

To mix Master & Ph.D. students

Attendance growth





Residence countries (26 in total) of ESIPAP alumni
First school book will be edited this year

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Already 4 years of experience

2014

2015

2016

2017

With you, we are going to celebrate our 5th anniversary (Feb 15th)

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Schedule 2018	Monday Jan 22nd	Tuesday Jan 23rd	Wednesday Jan 24th	Thursday Jan 25th	Friday Jan 26th
09:00					
	Arrival	Experimental Cosmology lecture 1 Juan Macias Perez *LPSC Grenoble*	Experimental Subatomic Physics lecture 1 Marco Delmastro *LAPP Annecy*	Experimental Astroparticle Physics lecture 1 François Montanet *LPSC Grenoble*	Experimental Subatomic Physics lecture 4 Marco Delmastro *LAPP Annecy*
10:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:45		Experimental Cosmology lecture 2 Juan Macias Perez *LPSC Grenoble*	Experimental Subatomic Physics lecture 2 Marco Delmastro *LAPP Annecy*	Experimental Astroparticle Physics lecture 2 François Montanet *LPSC Grenoble*	Experimental Subatomic Physics tutorial 2 Marco Delmastro *LAPP Annecy*
12:15	12:00 OFFICIAL OPENING (welcome & building visit)				
	13:00 WELCOME LUNCH	BREAK	BREAK	BREAK	BREAK
14:00		Experimental Cosmology lecture 3 Juan Macias Perez *LPSC Grenoble*	Experimental Cosmology tutorial 2 Juan Macias Perez *LPSC Grenoble*	Experimental Subatomic Physics lecture 3 Marco Delmastro *LAPP Annecy*	Experimental Subatomic Physics lecture 5 Marco Delmastro *LAPP Annecy*
	14:30 Presentation of ESIPAP & Presentation of students Johann Collot ESIPAP Director				
15:30		Coffee Break	Coffee Break	Coffee Break	Coffee Break
15:45	Coffee Break				
	16:15: The Neutrino physics program Alain Blondel *CERN & U. of Geneva*	Experimental Cosmology tutorial 1 Juan Macias Perez *LPSC Grenoble*	Experimental Cosmology tutorial 3 Juan Macias Perez *LPSC Grenoble*	Experimental Subatomic Physics tutorial 1 Marco Delmastro *LAPP Annecy*	Experimental Subatomic Physics tutorial 3 Marco Delmastro *LAPP Annecy*
17:15					
	CHECK-IN AT THE RESIDENCE & SHOPPING FOR GROCERIES				

Schedule 2018	Monday Jan 29th	Tuesday Jan 30th	Wednesday Jan 31st	Thursday Feb 1st	Friday Feb 2nd	Saturday Feb 3rd
09:00	Experimental Astroparticle Physics lecture 3 François Montanet *LPSC Grenoble*	Interaction of Particles with Matter lecture 1 Lucia di Ciaccio *LAPP Annecy*	Tracking : lecture 1 Jérôme Baudot *IPHC Strasbourg*		Radioprotection Helmut Vincke *CERN*	9:30 - 11:00 Exam EAP + EC
10:30	Coffee Break	Coffee Break	Coffee Break		Coffee Break	Coffee Break
10:45	Experimental Astroparticle Physics tutorial 1 François Montanet *LPSC Grenoble*	Interaction of Particles with Matter tutorial 1 Lucia di Ciaccio *LAPP Annecy*	Tracking : lecture 2 Jérôme Baudot *IPHC Strasbourg*	*Bus leaves at 7:00 from ESIPAP* (Lunch at CERN) Lab Training Sessions at CERN *Return scheduled at 18:00*	Radioprotection Helmut Vincke *CERN*	11:30 - 13:00 Exam ESP
12:15	WORKING LUNCH	BREAK	BREAK		BREAK	
14:00	Experimental Subatomic Physics tutorial 4 Marco Delmastro *LAPP Annecy*	Interaction of Particles with Matter lecture 2 Lucia di Ciaccio *LAPP Annecy*	Tracking : lecture 3 Jérôme Baudot *IPHC Strasbourg*		Stochastic & Statistical Aspects : part 1 lecture 1 Florian Ruppin *LPSC Grenoble*	
15:30	Coffee Break	Coffee Break	Coffee Break		Coffee Break	
15:45	Experimental Subatomic Physics tutorial 5 Marco Delmastro *LAPP Annecy*	Interaction of Particles with Matter tutorial 2 Lucia di Ciaccio *LAPP Annecy*	Tracking : tutorial Jérôme Baudot *IPHC Strasbourg*		Stochastic & Statistical Aspects : part 1 lecture 2 Florian Ruppin *LPSC Grenoble*	
17:15	Future High-Energy Linear Collider JUAS Seminar Louis Rinolfi		AFTER WORK AT ESI			

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Schedule 2018	Monday Feb 5th	Tuesday Feb 6th	Wednesday Feb 7th	Thursday Feb 8th	Friday Feb 9th
09:00					
	Calorimetry : lecture 1 Christophe Ochando *CNRS*	Calorimetry : lecture 3 Christophe Ochando *CNRS*	Imaging and Cherenkov Detectors : lecture 1 François Montanet *LPSC Grenoble*		9:00 - 10:30 Exam IPM
10:30	Coffee Break	Coffee Break	Coffee Break		Coffee Break
10:45	Stochastic & Statistical Aspects : part 2 lecture 1 Yann Coadou *CPPM Marseille*	Stochastic & Statistical Aspects : part 2 lecture 3 Yann Coadou *CPPM Marseille*	Imaging and Cherenkov Detectors : lecture 2 François Montanet *LPSC Grenoble*	*Bus leaves at 7:00 from ESIPAP* (Lunch at CERN) Lab Training Sessions at CERN	Imaging and Cherenkov Detectors : lecture 3 François Montanet *LPSC Grenoble*
12:15	WORKING LUNCH	BREAK	BREAK		BREAK
14:00	Stochastic & Statistical Aspects : part 2 lecture 2 Yann Coadou *CPPM Marseille*	Stochastic & Statistical Aspects : part 2 lecture 4 Yann Coadou *CPPM Marseille*	Muon Detection lecture 1 Laurent Chevalier *CEA-IRFU Saclay*	*Return scheduled at 18:00*	Muon Detection lecture 3 Laurent Chevalier *CEA-IRFU Saclay*
15:30	Coffee Break	Coffee Break	Coffee Break		Coffee Break
15:45	Calorimetry : lecture 2 Christophe Ochando *CNRS*	Calorimetry : lecture 4 Christophe Ochando *CNRS*	Muon Detection lecture 2 Laurent Chevalier *CEA-IRFU Saclay*		Muon Detection tutorial Laurent Chevalier *CEA-IRFU Saclay*
17:15					

Schedule 2018	Monday Feb 12th	Tuesday Feb 13th	Wednesday Feb 14th	Thursday Feb 15th	Friday Feb 16th	Saturday Feb 17th
09:00						
	Detector Simulation Alberto Ribon *CERN*	Detector Simulation Alberto Ribon *CERN*	Computing sessions Eric Chabert *IPHC Strasbourg* Eric Conte *IUT de Colmar*	Computing sessions Eric Chabert *IPHC Strasbourg* Eric Conte *IUT de Colmar*	9:00 - 10:30 Exam Calorimetry	9:30 - 11:00 Exam Tracking
10:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:45	Detector Simulation Alberto Ribon *CERN*	Detector Simulation Alberto Ribon *CERN*	Computing sessions Eric Chabert *IPHC Strasbourg* Eric Conte *IUT de Colmar*	Computing sessions Eric Chabert *IPHC Strasbourg* Eric Conte *IUT de Colmar*	Particle Identification Guillaume Unal *CERN*	11:30 - 13:00 Exam Muon
12:15	WORKING LUNCH	BREAK	BREAK	BREAK	BREAK	
14:00	C++ Programming Eric Chabert *IPHC Strasbourg*	C++ Programming Eric Chabert *IPHC Strasbourg*	Computing sessions Eric Chabert *IPHC Strasbourg* Eric Conte *IUT de Colmar*	Computing sessions Eric Chabert *IPHC Strasbourg* Eric Conte *IUT de Colmar*	Particle Identification Guillaume Unal *CERN*	
15:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break		
15:45	C++ Programming Eric Chabert *IPHC Strasbourg*	C++ Programming Eric Chabert *IPHC Strasbourg*	Computing sessions Eric Chabert *IPHC Strasbourg* Eric Conte *IUT de Colmar*	Computing sessions Eric Chabert *IPHC Strasbourg* Eric Conte *IUT de Colmar*		
17:15	C++ Programming Eric Chabert *IPHC Strasbourg*		Computing sessions Eric Chabert *IPHC Strasbourg* Eric Conte *IUT de Colmar*			
18:45						

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Exams are not mandatory for all, but they are a nice incentive to make progress in acquiring knowledge, and for social group building.

Tutorials will prepare you to the exams

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French evaluation mark scale

- **Linear mark scale, proportional to accomplishment & knowledge acquisition**
- **minimum 0 maximum 20**
- **< 10 fail (FX ECTS grade)**
- **≥ 10 pass (E grade)**
- **12 qualified (C grade)**
- **14 good (B grade)**
- **16 very good (A grade)**
- **18 excellent**
- **20 maximum**

- All lecturers have made their best to deliver the state-of-the-art view of their field - As a reward, they simply expect you to attend their courses.
- lecture slides will be available the day before through indico.
- Take advantage to have some of the best specialists in their field to ask questions during lectures and/or during breaks
- We are a family-style school ! If you have suggestions to improve please tell us. We always managed to react and most of the times to solve the problems.

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