

ESIPAP:

European School of Instrumentation in Particle and astroparticle Physics

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European School of Instrumentation in Particle and Astroparticle Physics

ESIPAP

- Regional observation :
 - we miss a few students per year highly-educated in HEP and astroparticle instrumentation
 - local yearly recruitment rate (~2-4 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 Professionnal 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

- 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

Computing sessions at ESI
 8 Nov. 2013

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 annoncement to your colleagues, friends and students)

Planning is established

	Monday 20/01	Tuesday 21/01	Wed. 22/01	Thurs. 23/01	Fri. 24/01
08:30-09:00	registration				
9:00-10:30	ESP lecture	ESP lecture	ESP lecture	ESP lecture	ESP lecture
break					
10:45 12:15	EAPC lecture	EAPC lecture	EAPC lecture	EAPC lecture	EAPC lecture
lunch	Welcome buffet				
14:00-15:30	ESP lecture	ESP tutorial	ESP tutorial	ESP tutorial	ESP tutorial
break					
15:45-17:15	EAPC lecture	EAPC tutorial	EAPC tutorial	EAPC tutorial	EAPC tutorial
ESP = Exper					
EAPC = Exp	erimental Astropa	rticle and Cosm	ological Physic	e	

	Monday 27/01	Tuesday 28/01	Wed. 29/01	Thurs. 30/01	Fri. 31/01
9:00-10:30	IPM lecture	IPM lecture	IPM Lecture	C++ lecture	C++ lecture
break					
10:45 12:15	SSA lecture	SSA lecture	SSA lecture	SSA tutorial	C++ tutorial
lunch					
14:00-15:30	IPM lecture	IPM tutorial	IPM tutorial	C++ tutorial	ESP exam
break					
15:45-17:15	SSA lecture	SSA tutorial	SSA tutorial	SSA tutorial	EAPC exam
IPM = Intera	ction of Particles	with Matter			
SSA = Statis	tical & Stochasti	c Aspects			
C++= C++ pr	rogramming				

	Monday 03/02	y 03/02 Tuesday 04/02 Wed. 05/02		Thurs. 06/02	Fri. 07/02	
9:00-10:30	DS lecture	DS lecture	RP lecture	Lab session 1	Computing	
break	DO TOOLATO	20 10014110	THE TOOLUGE	at CERN	session 2	
10:45 12:15	Cal lecture	Cal lecture	RP lecture		at Archamps	
lunch						
14:00-15:30	DS lecture	DS lecture	0		IPM exam	
break			Computing session 1	Lab session 2 at CERN		
15:45-17:15	Cal lecture	Cal tutorial	at Archamps		SSA exam	
DS = Detect	or Simulation					
Cal= Calorir	netry					
RP= Radiop	rotection					

l l	Monday 10/02	Tuesday 11/02	Wed. 12/02	Thurs. 13/02	Fri. 14/02	Sat. 15/02
					0	
9:00-10:30	TR lecture	TR lecture	PI lecture	Lab session 3	Computing session 3 at Archamps	ICD exam
break				at CERN		
10:45 12:15 N	MD lecture	MD lecture	ICD lecture			PI exam
lunch						
14:00-15:30	TR lecture	TR tutorial	PI tutorial	TR exam	o "	
break					Computing session 4	
15:45-17:15 N	MD lecture	MD tutorial	ICD lecture	ICD tutorial	at Archamps	
					at Archamps	
18:00-19:00	Cal exam			MD exam		
TR = Tracking	J					
MD = Muon D	etection					
PI = Particle k	dentification					
ICD=Imaging	& Cherenkov De	tectors				

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.