



LABORATÓRIO DE INSTRUMENTAÇÃO  
E FÍSICA EXPERIMENTAL DE PARTÍCULAS  
*partículas e tecnologia*

# [ LIP Summer Internships 2020 ]

**Presentation of Summer Projects  
Lisbon**

# LIP

# Welcomes You



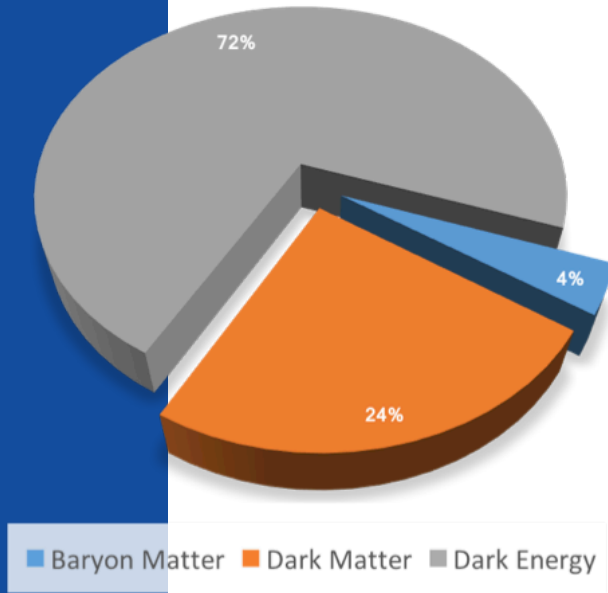
**Coimbra, Lisboa, Minho**

~ 200 members  
~ 90 PhD  
~ 75 students  
~ 27 engineers, technicians  
7 administrative staff

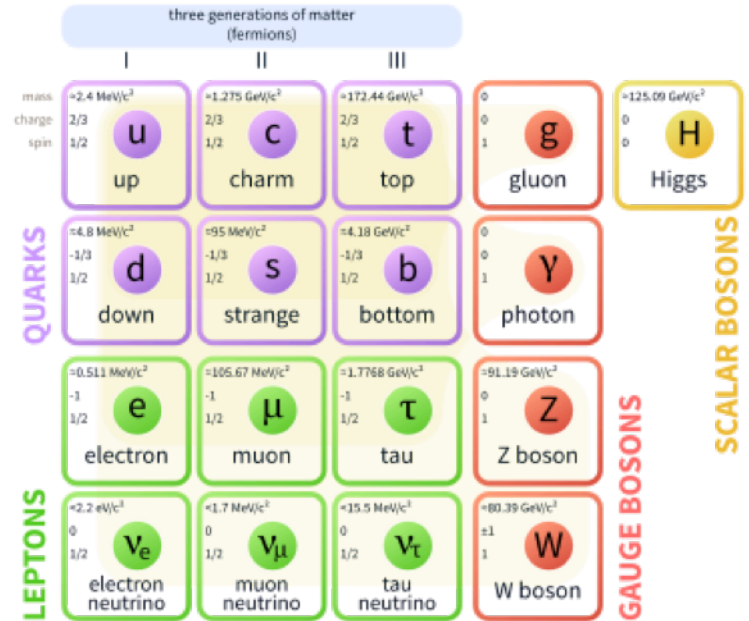


- **Experimental Particle Physics and Astrophysics**
- **Development of Instrumentation**
- **Scientific Computing**

# LIP: Particle Physics

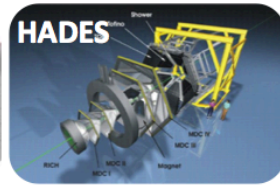
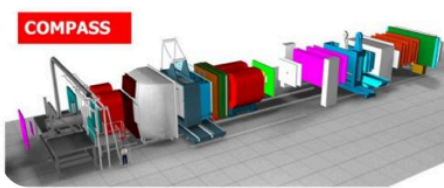
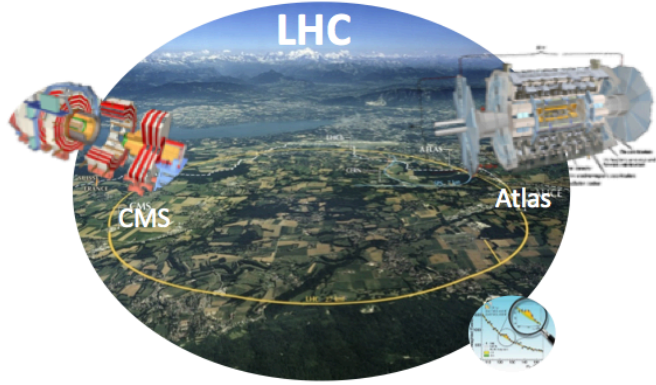


## Standard Model of Elementary Particles

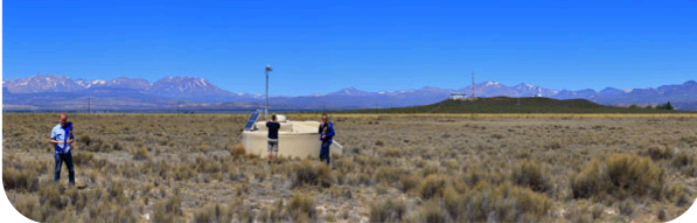




# Detectors from the bottom of deep mines to outer space

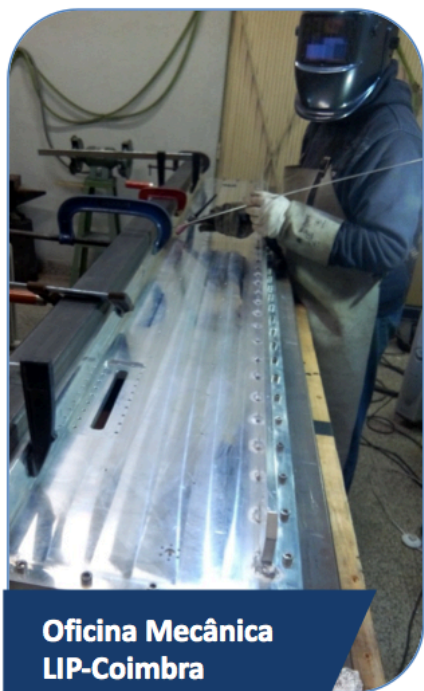


The Pierre Auger Observatory





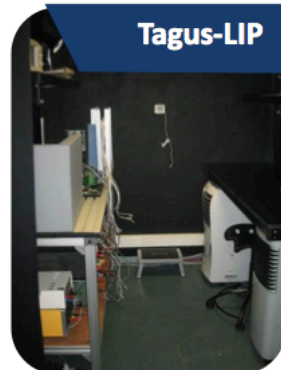
# Research infrastructure



**Oficina Mecânica  
LIP-Coimbra**



**LOMAC**



**Tagus-LIP**



**E-CRLab**



**NCG - Lisboa**

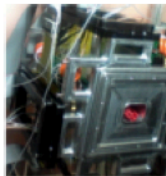


**Laboratório de detectores  
LIP-Coimbra**

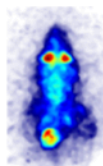
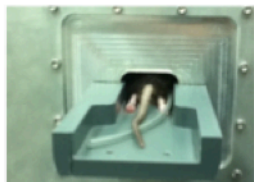
## Detectores RPCs



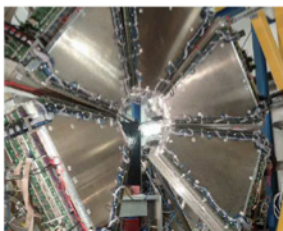
para a pampa,



para PET animal e humano,



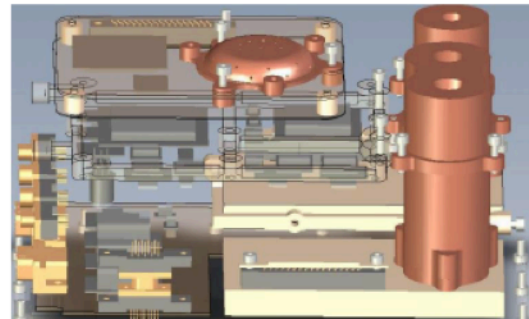
para a Física de partículas



## Detectores Xenon



## Detectores de radiação em missões espaciais



RADEM – Radiation hard electron monitor (LIP: desenho do detector de direcção)

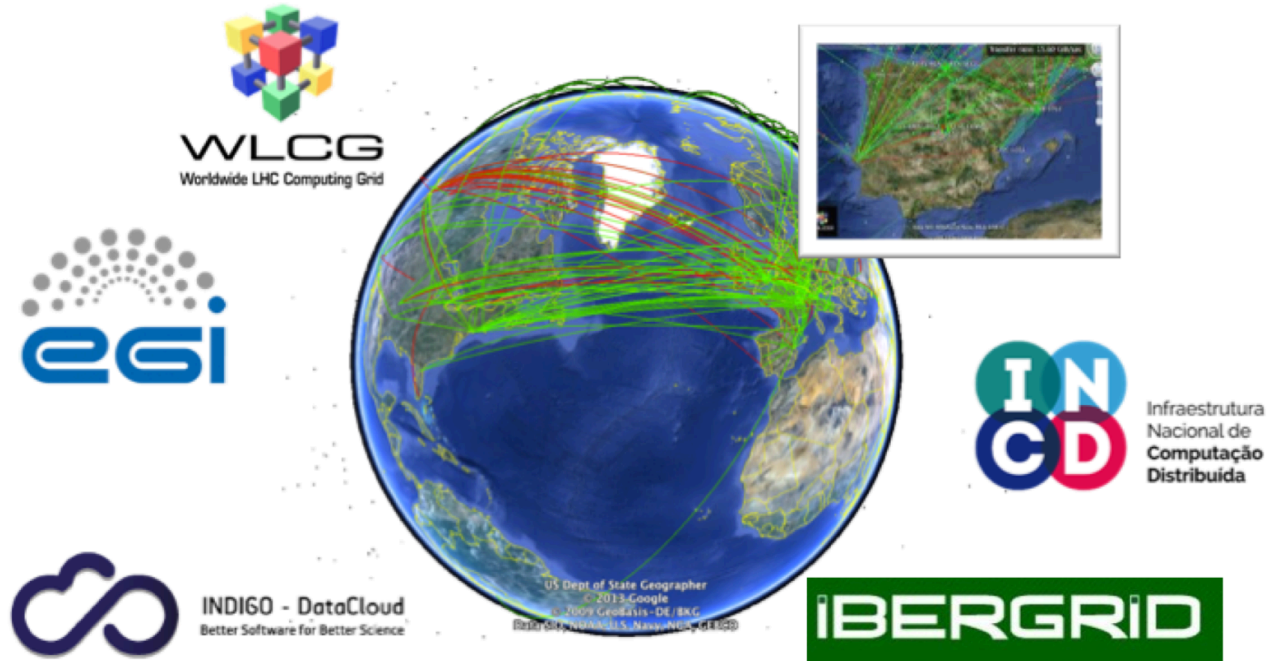
## Clear-PEM





# Scientific Computing

- Information & Technology R&D
- Participation in digital infrastructures and international consortia
- Support to scientific community







## Summer 2020

Registration: 27/4 - 31/5  
Internships: Jul - Sept  
Tutorials: 13/7 - 17/7  
Workshop: 3/9 - 4/9

- *Students become collaborators in LIP's research teams*
- 1 week of introductory lectures + hands-on tutorials + "thematic chat"
- Integrate research projects from 2 weeks to 2 months
- 2 day long final workshop where each student present his/her work to fellow students and the LIP researchers
- Locations: Remotely (once Covid-19 situation normalised, at Lisbon: **3Is** complex, IST, FCUL)
- How to apply? Students select up to 5 projects in order of preference; to facilitate selection should share interests and past experience (academic, research, computing, electronics, etc)

**<https://www.lip.pt/training/internship-program/>**



## 21 Projects @ Lisbon

### 4 Areas

Do not hesitate to  
ask questions!

(contact person near  
project description)

### **Physics at the LHC**

Precision measurements and searches for physics beyond the Standard Model with data from the LHC experiments

### **Cosmic Rays, Neutrinos Dark Matter**

Physics with cosmic rays, the elusive neutrinos and searches for dark matter

### **Structure of Matter and Heavy-Ions**

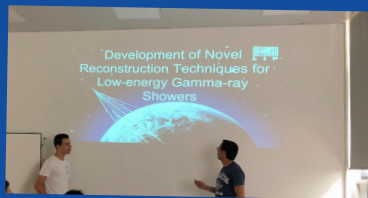
Exploring the structure of matter – from nucleons and nuclei to the plasma of quarks and gluons

### **Detectors & Instrumentation**

Characterization and development of (hardware and software) systems that facilitate scientific research.

<https://www.lip.pt/training/internship-program/>

# 2018 - 2019 in pictures !



## Queres fazer física em ambiente Internacional? Junta-te a nós este verão!

Raios Cósmicos, Neutrinos e Matéria Escura  
Detetores e Instrumentação  
Física do LHC  
Estrutura da Matéria e Iões Pesados



Estágios de investigação para  
estudantes de Física e Engenharia

Duração entre duas semanas e dois meses  
1 de Julho a 15 de Setembro

Inscrições abertas de  
15 de Abril a 31 de Maio de 2020



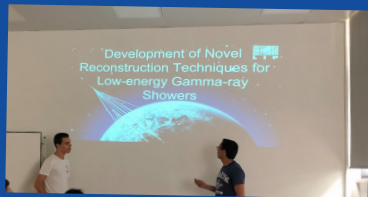
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E FÍSICA EXPERIMENTAL DE PARTÍCULAS  
e Física Nuclear

Co-financiado por:





# 2018 - 2019 in pictures !



Mid term "chats"



Tutorials (C/C++, Root...)



Lectures + "thematic" chat



Before closing:  
Research paper



Queres fazer física  
em ambiente Internacional?  
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avaliado e certificado

Cofinanciado por:

