

# The ATLAS experiment



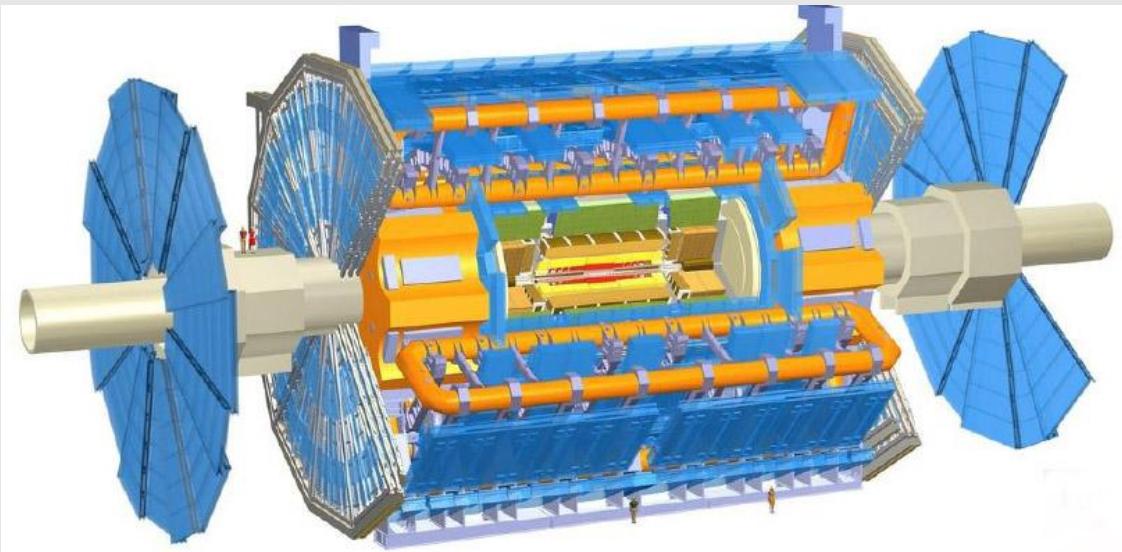
*Amélia Maio  
(LIP and FCUL)*



# The ATLAS detector

*The ATLAS detector operates at the CERN Large Hadron Collider (LHC):  
p-p collisions at 8 TeV  
Pb-Pb collisions at 2.76 TeV*

*Main goals:  
Probe the Standard Model and beyond at the TeV scale*



*We participate since the beginning of ATLAS (LoI, 1992)*

*Design, construction, operation and upgrade of Tilecal*

*ALFA luminosity detector*

*Trigger/Data Acquisition*

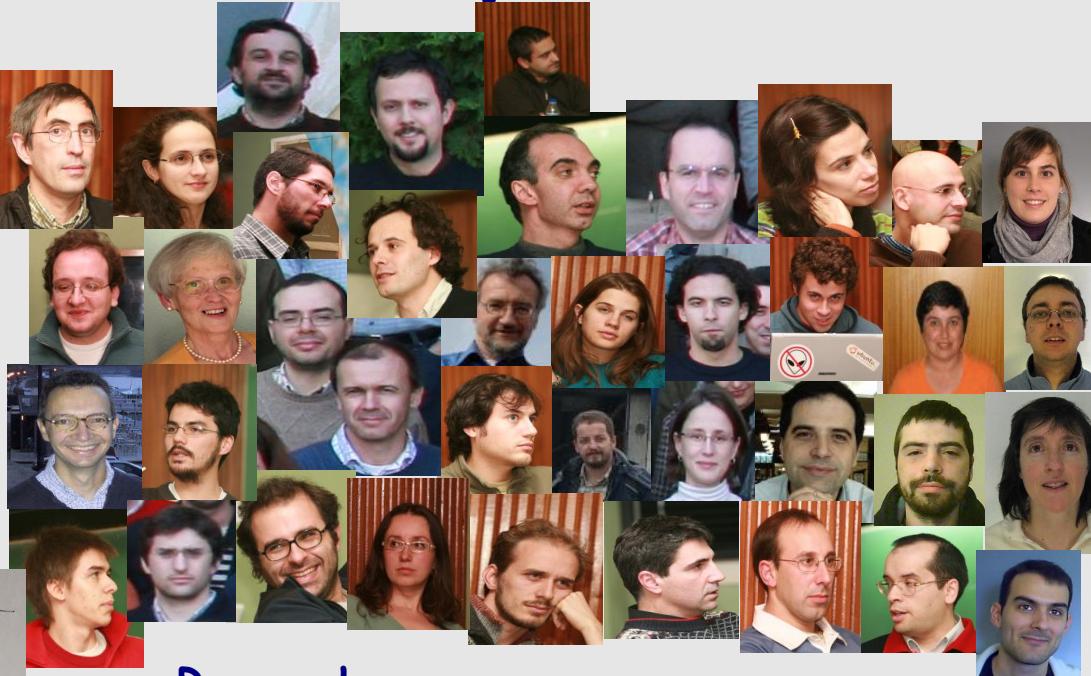
- database interface developments
- jet energy calibration

*Physics*

- $W$  cross section
- top quark properties
- search for the Higgs boson
- heavy ions collisions



# People and Institutions



## Researchers

A. Amorim, N. Anjos, J. Augusto, J. Carvalho, N. Castro, P. Conde Muiño, G. Evans, A. Gomes, A. Maio, J. Maneira, M. Maneira, M. Oliveira, A. Onofre, B. Pinto, H. Santos, J.G. Saraiva, F. Veloso, H. Wolters

## Students

J.R. Alves, A. Delgado, J.P. Espinosa, M. Fiolhais, O. Galan, B. Galhardo, E. Gouveia, A. Lopes, L. Lopes, P. Jorge, J. Miguens, A. Palma, R. Pedro, E. Pinto, S. Santos, L. Seabra, M. Sousa

## Other staff

L. Gurriana, J. Patriarca, J. Silva

LIP in collaboration with:

FCUL

FCTUC

U. Minho

CFNUL

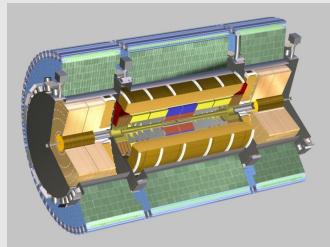
CEFITEC/UNL

IDMEC/IST

AdI engineers training program



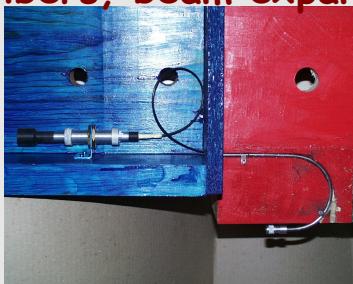
# Design and production of Tilecal hadron calorimeter



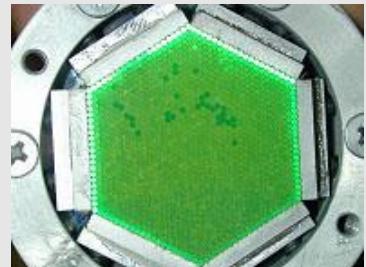
**Scintillators**



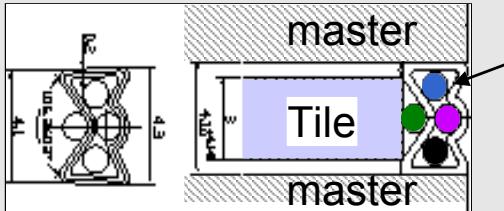
Laser monitoring system: connectors, fibers, beam expander



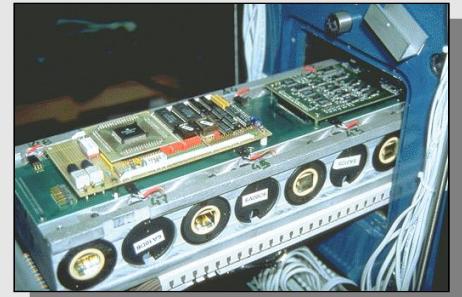
600000 WLS fibers  
aluminized



150000 plastic profiles



PMT blocks supports



Fibers insertion with robot



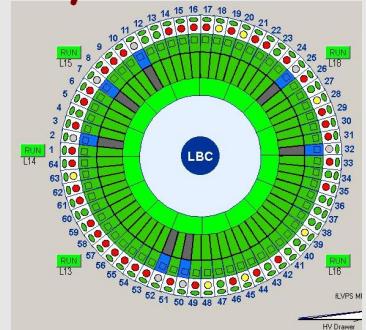
PMT quality control



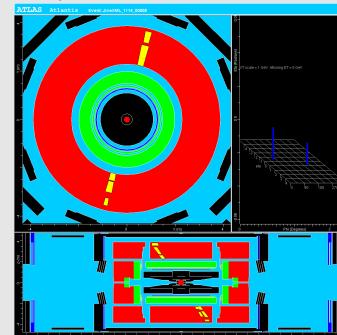
Instrumentation of the modules



Detector control system



Calibration, certification and commissioning  
with testbeam and cosmic rays





# Thesis

Thesis finished last year

2 PhD thesis

2 master thesis

Thesis started/ongoing

11 PhD thesis

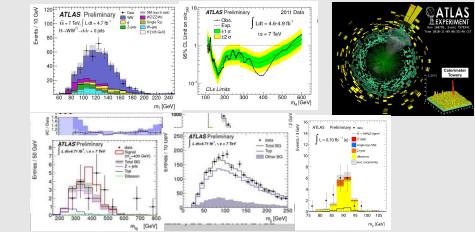
2 master thesis



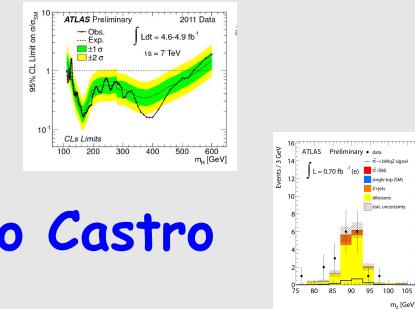


# Next talks

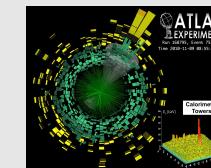
ATLAS Physics highlights - Patricia Conde Muñoz



Search for the Higgs boson - Joana Miguéns



Measurements of top quark properties - Nuno Castro



Studies on heavy ions collisions - Helena Santos

Detector activities on Trigger and Tilecal - Agostinho Gomes

