

# VIII SiLC Meeting Santander-Spain, December 2008



02/07/2008



Alberto Ruiz-Jimeno

Santander



02/07/2008

Alberto Ruiz-Jimeno

## Accesses:

### ➤ By Fly:

Iberia (Madrid, Barcelona, Sevilla, Valencia,...),

Ryan Air (Francfort (Hahn), Londres (Stansted), Roma (Ciampino), Milán (Bergamo), Madrid, Dublin , Barcelona (Reus))

### ➤ By car: Motorway A-8, N-623, N-611

### ➤ By train: Madrid

### ➤ By bus: Many spanish cities

### ➤ By ferry: Santander-Plymouth



DATE: 1-3 December?, 8-10 December...?

( to note:

\* **DISCRETE '08 Symposium on Prospects in the Physics of Discrete Symmetries**

**11– 16 December 2008, IFIC, Valencia, Spain**

\* Hotels more expensive on week-end

.....)

To be decided today, if possible!!

## Accommodations (Sardinero Beach):



**Hotel Chiqui**



**Hotel Santemar**



**Hotel Silken Rio**

..... And many more possible hotels

Price in December is about 70-90 euros/night on labour days. Some offers if early booked



# Draft of the possible program:

- \* **Sensors R&D:** Mechanics, cooling, integration, alignment,...
- \* **Electronics R&D:** Chips, wiring, DAQ, ...
- \* **New sensors R&D:** Pixels technologies, 3D, CMOS-APD...
- \* **Test Beams:** CERN results, DESY and FNAL(2009) updates
- \* **Tools R&D:** Status of simulations and optimization studies,...
- \* **LOI preparation...**

**plus some session about ILC Phenomenology...**

## Practical details:

- \* A web page will be done soon
- \* Program to be defined, could include some invitations to non-SiLC members
- \* Site: IFCA has enough infrastructure for about 40 people. If needed it is possible to book for other sites ( University or nearby hotels)
- \* Videoconf and wireless facilities.

....

Would be worth to have a preinscription as soon as possible, to know about how much people will attend the meeting

## The Juan Jordá building



The Juan Jordá building is the site of the Instituto de Física Cantabria (IFCA) located behind the Faculty of Sciences within the University of Cantabria campus. In this way, IFCA (a joint venture between the Spanish National Council for Scientific Research - CSIC- and the University of Cantabria -UC) has fulfilled one of its basic infrastructure needs, since its creation in 1995.

Since then, our research groups have managed with great effort to promote a significant involvement in Development, both in instrumentation (alignment systems with new sensors, advanced radiometers, chaos-based electronic systems...) and in data acquisition and computer processing using large resources (grid systems, image processing, neural networks). This Development activities from basic Research have generated projects with industry, oriented to the transfer of technology to the private sector, and we hope it will also spawn an *innovation* component in industry.

This new building, with almost 2000 m<sup>2</sup>, allows consolidating all this activity, thanks to the new metrology, electronics and test laboratories, the thermal test room, the new *clean room*, and its computing equipment.

Our Institute participates, within its possibilities and its objectives, in the various regional initiatives, from projects with industry to public understanding of science tasks. One of our major joys is to allow the presence of new generations of Physics, Mathematics, Engineering and Technician graduates in our world-class research projects. To this end we organize open days and guided visits to our Institute.

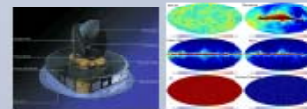
The Institute has installed recently an optical telescope with a dome, a radio antenna, and a meteorological station, with which didactical experiments are organized, including guided visits.



## Research Lines

### Department of Astrophysics:

- Cosmic microwave background  
Planck mission



- Extragalactic radio sources.  
Optical Instrumentation.  
Gran Telescopio de Canarias.



- X-ray Astronomy.  
XMM-Newton mission



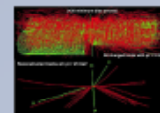
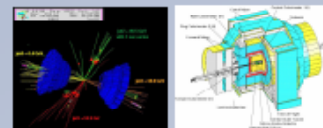
### Department of Structure of Matter:

- Non-linear dynamics of laser diodes (VCSELs)



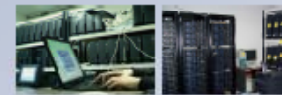
- Statistical and non-linear Physics

- Participation in the DELPHI (LEP, CERN) and CDF (Tevatron, Fermilab) experiments



- Participation in the CMS experiment (LHC, CERN)

- Distributed computing:  
Grids and e-Science



The Instituto de Física de Cantabria is a joint research centre of the Spanish Council for Scientific Research (CSIC) and the University of Cantabria (UC). Both organisations contribute personnel and resources. It was created in 1995.

The aim of the Institute is to do research in "basic science" in different aspects of Physics, studying from the largest (the Universe) to the smallest (elementary particles) scales.

This research is structured in two Departments:

- Astrophysics
- Structure of Matter:
  - High Energy Physics
  - Statistical and Non-linear Physics

In them, more than 50 researchers carry out various national and international projects.



CONSEJO SUPERIOR  
DE INVESTIGACIONES  
CIENTÍFICAS



UNIVERSIDAD  
DE  
CANTABRIA

Instituto de Física de Cantabria  
Auda. Los Castros, s/n.  
E-39005 Santander, Spain  
Tel.: +34 942 20 14 59  
Fax: +34 942 20 09 35  
Web: <http://www.ifca.unican.es>  
e-mail: [info@ifca.unican.es](mailto:info@ifca.unican.es)



## Electronics Laboratory

The resources of this laboratory are shared among three groups:

### Non-linear Physics

Study of chaotic electronic circuits.



### Astrophysics

Performing measurements to characterise the backend modules of the radiometers for the Planck mission.



### High Energy

Tests of the distance measurement sensors and the associated data acquisition.

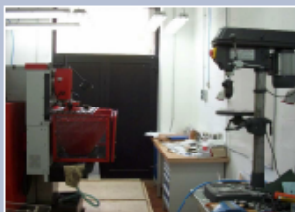


## Test room

A tank for the preparation of integrated circuits, and a gas extraction pump are installed in this room.



## Mechanical Workshop



## Thermal Test Room



## Metrology Laboratory



The measurements required to validate the Link alignment system for the CMS experiment (in the LHC accelerator at CERN) are carried out in this laboratory. Both the component test (optical sensors, lasers, gradient sensors, etc.) and the full real scale system tests are also performed here. This is possible thanks to the characteristics of the laboratory, with a surface of 145 m<sup>2</sup> and a free diagonal path of 27 m, as well as a reinforced concrete floor, independent from the structure of the building. The basic equipment includes 3 and 6 m-long granite benches, and work stations with anti-vibration and charge compensation systems. In addition, a high precision measuring machine working by contact is in operation.

## Clean Room



This room has been equipped to maintain a clean environment (class 10000) and to be able to work under controlled temperature and humidity conditions, with a conducting floor. These features allow assembling, calibrating and tuning of high precision optical sensors, 30 mm wide, for the alignment system at CMS, as well as the integration of low noise amplifiers for the radiometers at 30 and 44 GHz of the Planck mission.

## Computing Rooms

The building has a Gigabit network backbone in all rooms, using our own network electronics.



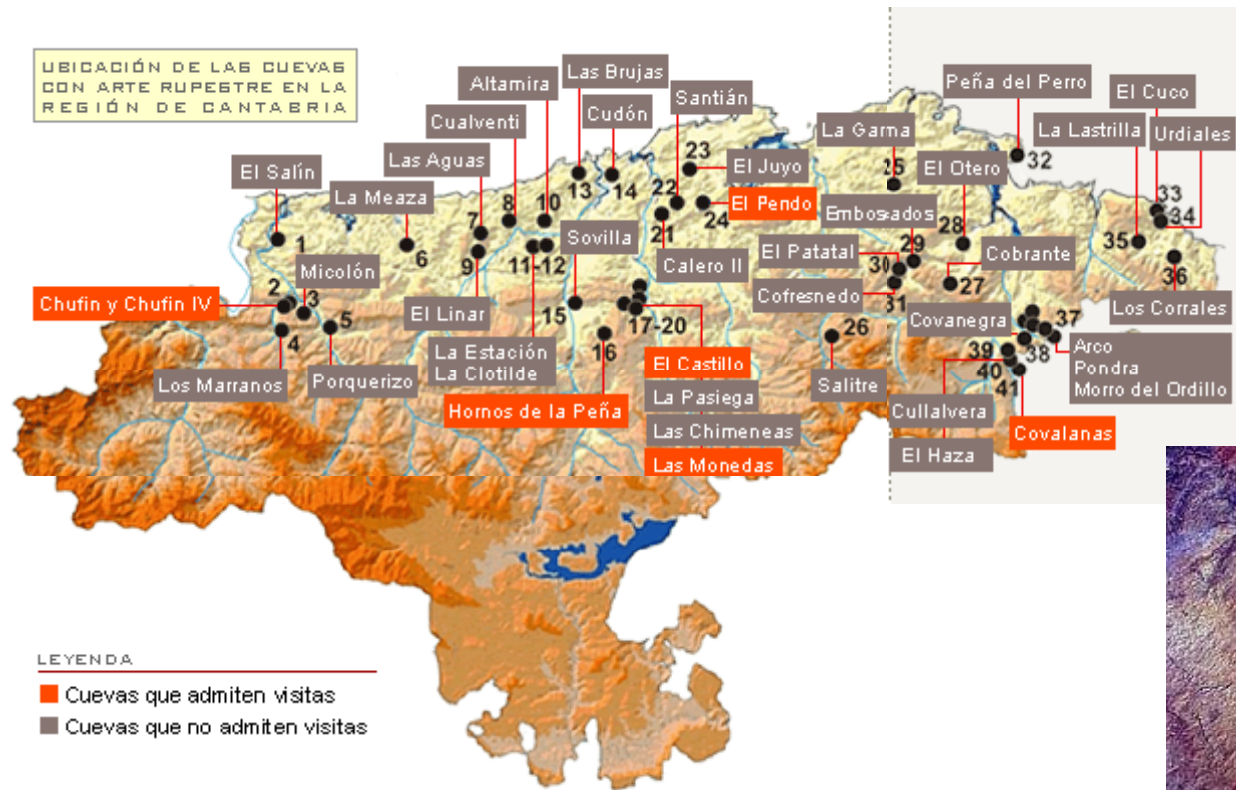
This network is connected through an optical fibre link to the ring of the University campus, and through another link to the RedIris node in Cantabria, which is in turn connected through two 622Mbps links to the Spanish, European (Géant) and international networks.



IFCA is the third Spanish centre in terms of computing resources (more than 1.7 Teraflops), including an IBM cluster with 180 CPUs Xeon 64 bit and 12 CPUs Power5 with up to 24 Gb of RAM, as well as an earlier cluster with 160 CPUs. In addition, it can access up to 29Tb of disk space, and a tape robot with storage space for up to 1 Petabyte (1000 Terabytes).

This equipment is used for different projects, including those oriented to the implementation of the Grid technology.

# CANTABRIA TURISTICA



# CANTABRIA TURISTICA

## El Soplao is a "UNIQUE" cave

The quality, whiteness and most of all the abundance of its **eccentric or helictite formations** are beyond all comparison.



**Cabárceno**  
Parque de la Naturaleza



# CANTABRIA TURISTICA

*Romanic churches*



*Landscape*



02/07/2008

Alberto Ruiz-Simero

# CANTABRIA TURISTICA

## Gastronomy



02/07/2008

Alberto Ruiz-Jimeno

# SEA Women in Santander Indonesia

02/07/2008

Alberto Ruiz-Jimeno