

AN AIS y ROSEBUD

The group of the University of Zaragoza (UZ) offers the incorporation of one or two students to the experiments ANAIS and ROSEBUD, aiming at the direct detection of the galactic dark matter with different detection approaches. ANAIS uses NaI(Tl) scintillators to search for the annual modulation effect expected in the dark matter signal. ROSEBUD develops scintillating bolometers able to discriminate WIMP signals from the dominant beta/gamma background. The students will participate in the detectors operation works to be done at the Canfranc Underground Laboratory, but will develop their tasks usually at the Zaragoza University facilities. They will learn, for instance, to analyze data using ROOT and will collaborate in the testing of a new acquisition system for ANAIS, as well as ROSEBUD data analysis. Being the ISAPP 2010 Doctorate School held in Zaragoza this July, the students will have access to some of the sessions, meeting the rest of participants and learning about dark matter and related subjects in a privileged framework.

MAGIC

The group at the Instituto de Física de Altas Energías (IFAE) in Barcelona offers to host for one month one student to work in the [MAGIC gamma-ray telescopes](#) located in the Observatorio del Roque de Los Muchachos in the island of La Palma. The student will join the MAGIC data taking team at the observatory for 15 days, in order to learn how the telescopes work and get acquainted with ground-based gamma-ray astronomy in general. For the rest of the period, the student will be hosted at the MAGIC group at

[IFAE](#)

where he will learn about some aspects of the MAGIC offline data analysis and interpretation.

The group Grupo de Altas Energías at Universidad Complutense de Madrid (UCM-GAE) offers to host one student for one or two months, in order to work in the [MAGIC gamma-ray telescopes](#) located in the Observatorio del Roque de Los Muchachos in the island of La Palma. The student can join the MAGIC data taking team at the observatory for 15 days, in order to learn how the telescopes work and get acquainted with ground-based gamma-ray astronomy in general. For the rest of the period, the student will be hosted at the MAGIC group at UCM-GAE, where he/she will learn about some aspects of the MAGIC telescopes and Fermi gamma-ray satellite data analysis and its interpretation in the context of Dark Matter searches. Students with a technical profile will also have the opportunity to participate in the hardware activities that the group is developing for the MAGIC telescopes.

ANTARES y KM3NeT

Instituto de Física Corpuscular UV/CSIC (IFIC-Exp). The selected candidates will work in the context of the search, in ANTARES and KM3NeT detectors, of high energy neutrinos produced in the annihilation of neutralinos in the Sun. The lightest neutralino is one of the possible candidates for dark matter in the Universe and it appears naturally in the spectrum of particles predicted in the supersymmetric theories. In the context of mSUGRA models and using the simulation programs available, the students will analyze the variations of the neutrinos fluxes from the Sun as functions of the parameters of the theoretical models. Besides, the students will

carry out simple analyses using ANTARES data in order to familiarize themselves with the statistics and computer tools that are necessary in this kind of experiments.

The group of the Universitat Politècnica de València (UPV) offers the incorporation of one student to the experiment ANTARES in the topic related to the acoustic detection system AMADEUS. There are two complementary tasks planed:

- Analysis: the student will analyse the acoustic data and will apply different filters in order to study the background of neutrino-like acoustic signals. This will be a first step necessary to study the viability of the technique for the detection of ultra-energetic neutrinos, and apply it for super heavy dark matter studies.
- Instrumentation: the student will work in the development and tests of a compact acoustic source able to generate neutrino-like signals.

Therefore, Physics or Engineer students with good skills in acoustics, instrumentation and/or signal processing and analysis are welcome.