

March 30th, 2010

PERSONNEL CONTRACTS WITH CPAN PARTIAL FINANCIAL SUPPORT

The CPAN project of the CONSOLIDER-INGENIO 2010 program announces 4 contracts of personnel with partial financial support from CPAN. The proposed contracts are meant to provide technical support to the groups' research activities in a series of priority lines within the strategic actions of the CPAN Project. A detailed description of these contracts, 3 university graduate degree and 1 university intermediate degree, can be found in Annex I. The maximum duration of the CPAN financial support assigned to each appointment will be two years and in any case it will be limited by the ending date of the project (29th November 2012).

The groups participating in the CPAN Project will make an effort to give publicity to the present announcement in order to optimize the number and quality of the applications received.

1) Amount and nature of the financial support

The CPAN financial support for each of the contracts specified in Annex I will have the aim of co-financing the total contract cost, understood to be the sum of the net retribution plus the Social Security company fee. The beneficiary entities will hire the selected candidates in accordance with the current labour legislation.

For the positions that require an university graduate degree, the amount of the CPAN financial support will be 30.000 euro per year, and the minimum annual retribution they will receive, which must be indicated in the contract, is 27.000 euro (brut salary).

For the position that requires an intermediate university degree, the amount of the CPAN financial support will be 25.000 euro per year, and the minimum annual retribution he/she will receive, which must be indicated in the contract, is 22.000 euro (brut salary).

The remaining co-financing of the contract will be the responsibility of the beneficiary groups and organisms, who will assume the cost of retribution increments of the hired personnel in the following years, as well as the repercussions of any increases in the Social Security fee. The given financial support will be compatible with other aids or subsidies, as long as they do not jointly exceed the total cost of the contract.

The beneficiary entities are obliged to put at the appointee's disposition all the installations and material means needed for the normal development of their work, as well as to guarantee the same rights and benefits enjoyed by the entities' personnel of similar category.

In case of interruption of the contract, the beneficiary entity and the appointed personnel are obliged to communicate such interruption to the CPAN Office within 15 natural days from the date of the interruption.

2) Candidate requisites

People whose contract is co-financed through this aid must have a graduate or intermediate university degree as required by the contract to which they apply. Candidates must be in possession of the required degrees by the date in which the application is presented.

3) Formalization and Application Process

Applications will be presented by the candidates through an internet application which can be accessed from the WEB page of the CPAN project: <http://www.i-cpan.es>. Applications must include:

- 1) The candidate's personal information.
- 2) The type of contract to which the candidate opts.
- 3) The candidate's Curriculum Vitae, including a scanned copy of the academic certification and university degree.

Applications must be presented from March 31, 2010 to April 17, 2010 (both inclusive).

The beneficiary group shall complete the application with a report about the optimal fitness of each candidate for the foreseen activities, assigning a tentative priority order to each candidate. These reports will also be processed through the internet application installed in the CPAN WEB page. The deadline for these reports is April 24, 2010.

4) Evaluation of applications

The evaluation of applications will be done by an Evaluation Commission named by CPAN's Executive Committee. The referred Commission will study and order the applications according to the following rules:

- 1) Compliance of the candidate to the development of the tasks to be performed, as function of the technical skills required.
- 2) CV of the candidate.

The resolution with the list of selected candidates will be published in CPAN's web page. The Evaluation Commission could propose, if needed, a list of supplants.

The proposed candidates must confirm in a period of 15 natural days their acceptance by means of e-mail which must be sent both to the receiving group as well as to the CPAN Office. If no notification is received within that period, the CPAN's Executive Committee will be entitled to select the following candidate in the list of supplants.

5) Payment of the CPAN financial support and follow-up

In general, the assigned funding will start on the date in which the contract between the candidate and the corresponding organization starts, either after the publication of the resolution or before that, in this last case always having as limitation the date in which the period for presenting applications is open.

Payments will be done on an annual basis to the corresponding organizations. The payment procedures for the first year will start after the publication of the resolution as soon as the contract being financed is presented. The payment for the following year requires the previous presentation (and positive evaluation by CPAN's Executive Committee) of a scientific-technologic report resuming the activities performed, signed by the contracted person and the IP responsible for the corresponding CPAN's group.

Any publication or result related with the activities performed under this program must contain a reference to the CPAN financial support.

ANNEX I: Relation of Contracts

Reference: CPAN10-TS01

“Simulation and analysis of nuclear physics experiments at n_TOF (CERN) and DESPEC (FAIR)”

CPAN beneficiary group:

Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT)

Candidate requirements:

The candidates must be Physicists with experience in Monte Carlo simulation and analysis of nuclear physics experiments. Good programming skills in C/C++ languages are required, as well as experience with the MCNPX and GEANT codes and neutron and gamma detectors. Candidates must have as well experience in reactor physics (Generation IV and subcritical accelerator driven systems) and knowledge on nuclear reaction theory and neutron induced cross section measurements. Traveling and long stays at CERN and other nuclear physics laboratories are expected.

Job profile:

The Nuclear Innovation Unit at CIEMAT is responsible of the design and construction of gamma ray and neutron detectors for the n_TOF (CERN) and DESPEC (FAIR) experiments, respectively. CIEMAT has carried out world leading neutron capture experiments with the n_TOF electromagnetic calorimeter. In addition, the group is developing a high performance data acquisition system for DESPEC. The main expected responsibilities and duties of the candidate are:

- Coordination the Monte Carlo simulation activities of the group.
- Development of a new Monte Carlo simulation platform which includes a high accuracy neutron transport modelling at low energies (i.e. below 20 MeV). The platform will be based on the GEANT4 and run at the supercomputing facilities at CIEMAT.
- Development of data processing tools for ENDF formatted evaluated cross sections for the complete (and known) isotopic chart.
- Monte Carlo simulation of complete experiments at n_TOF and DESPEC.
- Analysis of the neutron capture experiments at n_TOF with the Total Absorption Calorimeter.
- Programming in C/C++.

Information and contact:

Dr. Daniel Cano Ott; email: daniel.cano@ciemat.es

Reference: CPAN10-TS02

"Electronics development and technical support for the Spanish groups in the experimental activity with the AGATA array at LNL and PRESPEC (GSI-FRS)"

CPAN beneficiary group:

Instituto de Física Corpuscular (IFIC), Valencia.
Universidad de Salamanca- LRI.
Instituto de Estructura de la Materia (IEM), Madrid
Universidad de Huelva

Supervising CPAN group: Universidad de Salamanca

Candidate requirements:

Electronics Engineer or degree in physics with experience in nuclear electronics and detectors

Job profile:

Several Spanish groups working on experimental nuclear physics foreseen in short term to join the AGATA collaboration, initially contributing to the experimental activity that will be performed with the 5 Triple Clusters AGATA sub-array at the INFN-Laboratori Nazionali di Legnaro, Italy (early 2010 – mid 2011) and latter with a 10 Triple Cluster sub-array at the PRESPEC (GSI-FRS), Germany (mid 2011- early 2013). The aforementioned groups intend also to contribute to the development of high-resolution gamma detector technology and the associated digital sampling electronics, to be able to contribute in the present and future phases of AGATA. With this goal, the groups proposing this contract, expect to gain experience on Nuclear digital electronics as well as with solid state Ge crystal detectors. The work of the contracted engineer will be as well considered as contribution of CPAN-Spain to the AGATA collaboration. He/she will start the technological development activities on some of the following topics:

- Characterization and diagnostic of highly electronically segmented encapsulated Ge detectors.
- Design and maintenance of front-end detector electronics.
- Development associated with electronics and Ge detector cryostats.

Nevertheless his priority task will be to give high level technological support to the Spanish groups during the experimental activities with the 5 triple cluster AGATA sub-array at INFN-LNL and latter with the 10 triple cluster AGATA sub-array at PRESPEC (GSI-FRS). This will require most of the work to be performed in the host laboratory where AGATA will be located, first in Legnaro (Italy) and latter in Darmstadt (Germany). Other task will be performed in the CPAN sites proposing this contract.

Information and contact:

Andrés Gadea; e-mail: Andres.Gadea@ific.uv.es and Begoña Quintana; e-mail: quintana@usal.es

Reference: CPAN10-TS03

“Maintenance and Operation of the CMS L1 Muon Trigger”

CPAN Beneficiary group:

Universidad Autónoma de Madrid, Madrid

Candidate requirements:

All applicants with previous experience in Experimental Particle Physics will be considered, especially those holding a Ph.D. degree in Physics or an Engineer degree, and with demonstrable experience in activities similar to the ones specified below.

Job profile:

The Universidad Autónoma de Madrid High Energy Physics group at CMS shares the responsibility for the design, production, commissioning and operation of the L1 Drift-Tube Track-Finder (DTTF) muon trigger. The applicant is expected to play a leading role in one or more areas related to the maintenance, development, and operation of the DTTF trigger, during data taking at the LHC collider. The applicant will be based at CERN, working in close collaboration with the UAM-CMS group and other DTTF trigger responsible groups.

Main duties and responsibilities:

- Maintenance and operation of the hardware and its configuration online software, helping to understand and solve operational problems.
- Development and operation of tools for data quality monitoring.
- Data offline analysis, evaluating and optimizing the quality of the muon trigger decision for relevant physics studies.

Information and contact:

Jorge Fernández de Trocóniz, email: jorge.troconiz@uam.es

Reference: CPAN10-TM01

“Construction of the preparation Penning trap for MATS at FAIR and other developments for precision experiments”

CPAN beneficiary group:

University of Granada

Candidate requirements:

Master degree in physics, or industrial or electronics engineering. The knowledge of the candidate on software packages, programming languages, and English will be of special value.

Job profile:

The candidate will join the Nuclear Physics group at the University of Granada to take part in the development of several activities running in the framework of an experimental physics program which has been initiated in 2009. The work to be carried out has two components: one related to fundamental physics pursued by the international collaboration MATS at the future facility FAIR, and the other related to applications. They are described below:

- The candidate will take part in the design and starting phase of the construction of the preparation Penning trap for the MATS facility (precise

Measurements on very short-lived nuclei using an Advanced Trapping System) to be built at FAIR (Facility for Antiprotons and Ion Research) in Darmstadt (Germany). The group at the University of Granada is a very active member in the MATS collaboration; it has coordinated the Technical Design Report of the facility and is responsible for the preparation Penning trap. This task comprises developments of techniques like detection of ions by induced current after they are trapped and cooling in order to achieve optimal conditions for precision experiments on exotic nuclei.

- The candidate will assist in the design of a device conceived to produce monochromatic electron beams with direct applications to measurements of the response function of particle detectors and with extension to the field of medical physics. The development of this device will be firstly of interest for an experiment devoted to beta-neutrino correlation measurements in ${}^6\text{He}$ in an ion-trap experiment at GANIL. Along 2010 and related to these developments, the group intends to carry out two experiments at *Centro Nacional de Aceleradores* to continue the activities started with an experiment performed in April 2009.

These activities will be carried out in 2010 within the group. The success of the candidate will give him/her the opportunity for an extension of one year. If interested, he/she will be offered a PhD position provided he/she fulfills the academic requirements at the University of Granada. It is foreseen he/she will take part in experiments at European facilities.

Information and contact:

Antonio M. Lallena, e-mail: lallena@ugr.es