

Postdoctoral Research Position in experimental high-energy astrophysics

Within the framework of AHEAD [1], a project funded within the Horizon 2020 program of the European Commission, we have an immediate opening for a postdoctoral research position in experimental high-energy astrophysics.

Job description

The next major gamma-ray space observatory will most likely carry a large telescope optimized for the simultaneous detection of Compton and pair-producing gamma-ray events over a large bandpass (from ~ 100 keV to several GeV). Such an instrument concept is currently studied both in Europe and in the United States for mission proposals to ESA [2,3] and NASA [4]. Although the instrument schemes studied by the US and European teams are similar, some differences exist between the two proposals. The successful postdoctoral candidate will lead a research effort to find the optimal instrument design from detailed simulations with dedicated software tools like MEGALib [4]. He/she will perform a systematic study of the instrument performance, both in the Compton and the pair-production domains, as a function of the characteristics and geometrical arrangement of the telescope elemental detectors.

Requirements

Applicants should hold a PhD or equivalent in Physics or Astronomy, and good knowledge of programming is highly desirable. Previous experience in experimental gamma-ray astronomy would be advantageous and highly appreciated.

Conditions of employment

This is a fixed-term appointment funded for twenty months from date of hire. The successful applicant will work for ten months at the Institute of Space Sciences ICE (CSIC-IEEC) in Barcelona (supervision: Margarita Hernanz), and ten months at the Centre de Sciences Nucléaires et de Sciences de la Matière CSNSM (CNRS, Université Paris Sud) in Orsay (supervision: Vincent Tatischeff). Salary will be indexed within the wage tables of the Spanish CSIC and French CNRS, with a global gross salary of about 27,000 EUR for ten months in each country.

Application

Applications must be submitted electronically to Margarita Hernanz hernanz@ice.csic.es and Vincent Tatischeff vincent.tatischeff@csnsm.in2p3.fr; they should include a single PDF file containing a CV, publications list, and statement of research interests. In addition, please request two reference letters be sent directly to the above email addresses. The deadline for application is December 31st, 2016.

- [1] AHEAD (Integrated Activities in the High Energy Astrophysics Domain) is an ongoing project approved in the framework of the European Horizon 2020 program (Research Infrastructures for High Energy Astrophysics) – see <http://ahead.iaps.inaf.it/>
- [2] “The e-ASTROGAM gamma-ray space mission”, V. Tatischeff, M. Tavani, P. von Ballmoos et al. 2016, in *Space Telescopes and Instrumentation 2016: Ultraviolet to Gamma Ray*, Proc. of SPIE 9905, 99052N (see <https://arxiv.org/abs/1608.03739>)
- [3] “The e-ASTROGAM mission: Exploring the extreme Universe in the MeV-GeV range”, A. De Angelis, V. Tatischeff, M. Tavani et al. 2016, <https://arxiv.org/abs/1611.02232>
- [4] “Compton-Pair Production Space Telescope (ComPair) for MeV Gamma-ray Astronomy”, A. A. Moiseev, M. Ajello, J. H. Buckley et al. 2015, <https://arxiv.org/abs/1508.07349>
- [5] “MEGALib The Medium Energy Gamma-ray Astronomy Library”, A. Zoglauer, R. Andritschke, F. Schopper 2006, *New Astronomy Reviews.*, vol. 50, p. 629 (see <http://megalibtoolkit.com/>)