



Postdoctoral position in High-Energy Astrophysics

CEA Paris-Saclay, IRFU, Astrophysics department

Start of candidate selection: October 1st, 2021

CTA is the next generation ground based gamma ray observatory. With tens of telescopes on sites in both hemispheres, it will allow probing the high-energy sky with an unprecedented sensitivity and angular resolution, in the energy domain from a few tens of GeV to a few hundreds of TeV. The CTA group at the Astrophysics department of IRFU invites applications for a post-doctoral research position in high-energy astrophysics in the context of the start of the construction of the telescope arrays and the first real data analysis.

The objective is to contribute to the improvement and go toward finalisation of the CTA data pipeline software, aiming at producing sky images from the telescope array data. A prototype version has been made available and has now to be adapted to the construction phase of the observatory, and later its full exploitation. A particular effort is required to tune the existing implemented algorithms to real data in particular for what concern the data volume reduction (image cleaning) and the determination of energy and particle discrimination using supervised artificial intelligence. The development will be made in the context of the early science phase of CTA, giving the opportunity to cover science subjects to be discussed with the candidate.

The candidates should hold a PhD in subatomic physics, astroparticle or astrophysics with a strong motivation in software and algorithm developments as well as formal code release and documentation, the understanding of experimental data and physics analysis. The software will be written in Python and experience in object-oriented programming is appreciated.

The position is available from end 2021 for a period of up to 3 years. The position will remain open until filled. The candidate selection will start on October 1st.

The applicant should send the following documents in a digitized format to Thierry Stolarczyk, head of the group (thierry.stolarczyk@cea.fr):

- A letter of motivation;
- A curriculum vitae, a list of relevant publications;
- The names of at least two references and at least two letters of recommendation.

IRFU is the largest fundamental research institute of CEA, in the heart of the Paris-Saclay University, 40 km south of Paris. It covers major science fields in particle and nuclear physics and astrophysics, with a strong participation in instrumentation. The astrophysics department of IRFU is a joint CEA Paris-Saclay, CNRS, Paris- University laboratory. It comprises 200 scientists, engineers, and technicians and covers astrophysics from planetology and stellar formation to high-energy astrophysics, galaxy dynamics and cosmology. The CTA group consists of about ten scientists involved in high-energy astrophysics through various projects or observatories (HESS, Fermi, Integral, SVOM, XMM-Newton, Antares), with expertise in galactic science and GRB. The CTA data pipeline development is currently coordinated in the group.

More information:

- Irfu: <http://irfu.cea.fr>
- Irfu Astrophysics department: <http://irfu.cea.fr/Dap/en/>
- The Cherenkov Telescope Array, CTA : <http://www.cta-observatory.org>

