



FICHE DE POSTE

Métier ou emploi type* : Expert in instrument developpement (C1B43)

* REME, REFERENS, BIBLIOPHILE

Job description

Role : System engineer

Category : A **Class** : IR (Ingénieur de recherche et de formation)

Activity Branch (BAP) : C - Engineering science and scientific instrumentation

Assignement

Administrative : UNIDIA- OBSERVATOIRE DE PARIS

Géographique : site de Meudon - 5, place Jules Janssen, 92190 Meudon



ENVIRONNEMENT ET CONTEXTE :

The CNRS is a public scientific, cultural and professional establishment (EPSCP). Its missions are mainly focused on research, training and the dissemination of knowledge. The CNRS addresses all areas of research through its ten institutes. Among these, the INSU, structured around observatories for the sciences of the Universe and involved in national and international programmes, opens up avenues to respond to the major scientific challenges of today in astrophysics and Earth and environmental sciences. To do this, it relies on its UMRs (Joint Research Units) to carry out its missions.

Assigned to the CNRS's Institut national des sciences de l'univers (INSU), you will work at the Paris Observatory's Meudon site, within the GEPI Instrumental Pole (soon to be known as UNIDIA), which will bring together around forty engineers and technicians working on instrumentation dedicated to astrophysics.

UNIDIA will comprise three departments (Instrumentation, Software Engineering and Mechanics). We define, design and build major instrumental projects for astronomy on the ground and in space. As such, we work on both upstream research and technology projects and major international instrumentation projects. As a shared centre, its staff work for all the laboratories at Paris Observatory, which means a wealth of technical experience and numerous career opportunities.

The person recruited will work in the Instrumentation Unit, which is responsible for developing instruments for current and future telescopes. The Instrumentation Division, which has a staff of around ten, is responsible in particular for designing instruments for the large European telescopes currently under construction (VLT: Very Large Telescope, see <https://www.hq.eso.org/public/teles-instr/paranal-observatory/vlt/>) and those planned for the future (ELT: Extremely Large Telescope, see <https://elt.eso.org/>). This design work is carried out in close collaboration with the scientific teams that define the high-level specifications for future instruments.

Reporting to the Head of the Instrumentation Division, the person recruited will assist the Systems Engineer in charge of the MOSAIC project, the largest spectrograph in the world, which will be installed in the ELT over the next ten years, working closely with the other systems engineers on the project. This project will be one of six instruments to equip the ELT and is a key instrument in the astronomy and astrophysics theme of the INSU, one of the ten CNRS institutes.

The international dimension of the instrumental projects involves short-term travel in France and abroad (mainly in Europe). Teleworking is possible after 6 months in the post, under terms to be defined with the line manager and subject to compliance with CNRS regulations.

In-house training will be provided by the systems engineer on the MOSAIC project and will be complemented by tutoring and an NFA on project management. Additional external training will also be offered.

The person recruited will work on the Meudon campus of the Paris Observatory, set in 65 hectares of private wooded parkland overlooking the city of Paris. An administrative restaurant provides meals during the lunch break at a subsidised rate, and you will have access to the activities of the CAES, the CNRS equivalent of the works council.

Missions

Within the MOSAIC project, the systems engineer will be involved in activities relating to instrument specifications, supervising the development of the instrument (design then manufacture, assembly) and verifying its performance. A period of familiarisation with our tools and working methods is planned for a gradual immersion in the MOSAIC project.

Main activities

- Analysing scientific needs, in consultation with the researchers represented by the scientific lead (PI).
- Translate scientific needs into instrumental technical specifications.
- Negotiating instrumental compromises with researchers, where appropriate.
- Propose instrumental concepts likely to meet the requirements and analyse them in terms of performance, risks, costs and development time.
- Participating in the management of the project in compliance with the objectives (performance, costs, deadlines) from the upstream phases (drafting the development plan, setting up the project team, etc.) through to the integration of the sub-systems and then the instrument in Europe and on site.
- Leading the project team: organising communication between those involved in the project, maintaining cohesion on the basis of objectives, anticipating and managing potential conflict situations.
- Presenting, disseminating and promoting the project's achievements.
- Monitor technological developments in scientific instrumentation.

Specific Conditions

Staff supervision: NON

Projec management: OUI

The position is open on a contract basis for a period of 1 year, renewable.

The position is based at the Meudon site (92). Travel in France and Europe is to be expected.

Working hours: 37h35 over 5 days - CNRS offers a partial teleworking arrangement.

Holiday entitlement: 46 days (including 2 split days).

Skills

Expertise

- You are a graduate engineer or equivalent.
- Technical skills (generalist) in instrumentation will be appreciated.
- In-depth knowledge of the principles and implementation of engineering techniques (optics, mechanics, etc.).
- In-depth knowledge of physics and more specifically of instrumental optics in the specific context of spectrographic instruments.
- Knowledge of fibre optics would be a plus.
- General knowledge of tools and software specific to the field: specification management software, project management software, etc.
- Apply team management, communication, meeting facilitation and negotiation techniques,
- Applying functional analysis and operational safety techniques (analysis of instrument reliability, maintainability, availability and safety),
- Knowledge of project management methods,
- Know how to work in interaction with scientific and technical teams,
- Professional environment and networks.
- Written and oral presentation techniques.
- English language: B2 (Common European Framework of Reference for Languages).

Operational skills

- Writing documents in French and English.
- Formulating a summary.
- Choosing the appropriate method depending on the objective.
- Organise and run a meeting.
- Applying health and safety rules.

Soft skills

- High level of responsiveness.
- Strong autonomy
- Critical thinking skills
- Analytical reasoning skills
- Thoroughness and reliability
- Organisational and methodical skills and ability to manage priorities
- Respect for data confidentiality
- Ability to adapt to tools, procedures and working methods
- Good interpersonal skills at local and international level

For more information, see <https://elt.eso.org/instrument/MOSAIC> and <http://www.mosaic-elt.eu/>

Contact

Please send your application by e-mail: covering letter + CV + salary expectations to:

recrutements.gepi@observatoiredeparis.psl.eu