Research engineer, development, experimentation and spectrometer settings

General informations

Reference : UAR3266-VIRLEF-048
Workplace : CAEN
Date of publication : October 4th, 2022
Type of Contract : FTC Technical / Administrative
Contract Period : 1 year + 1 year
Expected date of employment : December 1, 2022
Proportion of work : Full time
Remuneration : between 2 522 € and 2 702 € gross monthly salary depending on experience (3-5 years)
Desired level of education : PhD
Experience required : Indifferent

Missions

The selected candidate will take part in the exploitation and research and development (R&D) activity for experimental nuclear physics of the physics division around the GANIL experimental areas.

Main activities

- Installation, testing and adjustment of GANIL instruments such as detection systems and associated electronics before and during experiments
- Participation in the adjustment of physics beam spectrometers (LISE, VAMOS, S3, etc.) with increasing responsibility over time.
- At the same time, the candidate will be involved in the development of new experimental techniques: project management of new detectors, participation in laboratory R&D in detection or electronics.

Skills

- Deep knowledge of what an ion beam is: theoretical and technical knowledge associated with production and acceleration.
- Deep knowledge of techniques for identifying and driving beams in spectrometers used in nuclear physics. In particular, a knowledge of beamline optics is essential.
- Knowledge of ion detection techniques and in particular for the detectors used to identify/detect the ions of the beam
- Knowledge of reference calculation tools (LISE++, SIMION or equivalent would be a plus) and data analysis methods (C++, root)

- Ability to work in a team
- Ability to work on multiple subjects simultaneously
- Know how to organize his/her work
- Autonomy
- Know how to interact with foreign teams; to listen to the requests of experimental physicists.

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- Proactive approach in maintaining and developing the performance of the spectrometers used in the experimental rooms.

Working context

The “Grand Accélérateur National d’Ions lourds” is a national research infrastructure based on the use of ion beams. Its fields of research are fundamental research in nuclear physics and nuclear astrophysics, the study of materials under irradiation and nano-structuring, molecular collisions and the interstellar medium, radiobiology and innovative techniques for imaging and therapy for certain cancers.
GANIL (about 280 people) is located in France, in the city of Caen, in Normandy. It is managed jointly, within an Economic Interest Group (GIE) by the Atomic Energy Commission (CEA/DRF) and by the National Center for Scientific Research (CNRS/IN2P3). As a national research infrastructure, GANIL serves the national, European and international scientific community.
The engineer will work in the DELPH group (Detection and Laser for Physics) composed of ~15 people (engineers and technicians) placed under the responsibility of a Group Leader. This group is part of the Physics Division, where the Research Activities group, made up of physicists, and the Acquisition Techniques Group (GTA) are also located. Within the Physics Division, the members of the DELPH group are responsible for hosting the experiments carried out at GANIL by an international scientific community. They are also conducting an R&D program on detection techniques, laser techniques, produced in experiments and finally on the manufacture of targets and thin layers.
He (she) will carry out on-call duty at home during periods of operation of the accelerators and in particular during the adjustment phases of the spectrometers.
The contractual employee recruited by the CNRS will benefit from certain advantages linked to on-site catering (employer's contribution to the price of the meal), number of holidays linked to the derogatory status of the GIE GANIL of around 53 days (32 CA and 21 JRTT) with a weekly work schedule of 40 hours per week, ie 8:25 am – 5:10 pm with a 45-minute lunch break, and benefits related to the actions of the GANIL social action committee.

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