Job Title: Scientist, Physics Operations IO0298

Requisition ID **8347** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Science and Technology Expertise** - **New Posting**

Fusion, the nuclear reaction that powers the sun and the stars, is a promising long-term option for a sustainable, non-carbon emitting global energy supply.

The ITER Organization (IO), based in the southern France, welcomes best talents who can together prepare the way to this new energy in a truly multi-cultural work environment.

We offer challenging assignments in a wide range of areas and encourage applications from candidates will all levels of experience. Applications from under-represented ITER Members' nations and women candidates are strongly encouraged, as IO strongly believes that a diversified, equitable, and inclusive workplace is crucial in solving one of the most complex scientific and engineering projects in the world today.

As the IO attracts and retains people coming from a vast array of different backgrounds and cultures, discrimination and exclusion cannot be tolerated. The IO believes it is our diverse perspectives and background that gives unique strength and value to the ITER mission, regardless of race, member nation, gender, religion, status, sexual orientation, or disability - all are welcome and respected at ITER.
The IO is committed to fostering a fair and equitable environment across all areas of the project, including compensation and benefits.

ITER CARE Values (Collaboration / Accountability / Respect / Excellence):
We perform our work with care, we care for the well-being of colleagues, our families and ourselves, and we care about the health of the planet for generations to come. CARE drives our work and our behaviors at ITER.

To see why ITER is a great place to work, please look at this video

Application Deadline: 29/04/2026
Department: Science & Integration Department
Division / Program: Science Division
Section / Project: Experiments & Plasma Operation Section
Job Grade: P1/P2 (SALARY SIMULATOR)
Language Requirements: Fluent in English (written & spoken)
Contract Duration: Initial Employment Contract up to five years with possibility for extension
Please note that the entry grade of this position begins at P1 and the final grade offered to the selected candidate is subject to the decision of the IO Director General.

Overview

Are you looking for an exciting opportunity at the heart of an ambitious fusion energy project?
Join us as a Scientist in the area of Physics Operations, where you will:

- Participate in and contribute to a multi-year training program to become a future ITER tokamak operator.
- Assist in the definition of experimental plans and preparations for ITER's scientific exploitation.
- Contribute to the development of the operational basis for disruption avoidance/mitigation within the ITER Research Plan.

A primary objective of the Experiments and Plasma Operation Section is to support the preparation for ITER plasma operation and execution of the ITER Research Plan by providing the design of the Plasma Control System (PCS), support its commissioning and define and verify implementation of protection strategies, particularly disruption avoidance and mitigation. It also aims to develop and validate pulse design simulators for plasma scenario preparation, define rules and instructions for ITER operation and provide training of tokamak and PCS operators.

Key Duties and Responsibilities

Primary Responsibilities

- Develops expertise in the area of Physics Operation of the ITER machine, participating in in-house training activities and gaining experience in ITER pulse and scenario design.
- Acquires tokamak physics operation experience through direct participation in tokamak experiments within the ITER Members' facilities.
- In accordance with the principal physics and operations focus of this post, contributes to the development of the strategy for disruption avoidance/mitigation on ITER, including assessment of the disruption avoidance and disruption mitigation system triggering functions which will be used within the ITER Plasma Control and Advanced Protection Systems.
- Contributes to the preparation and implementation of the disruption load validation program and participates in the development of the DMS optimization plan.

Additional Responsibilities

- Once adequate ITER Physics Operations expertise is acquired, participates in the definition, development and documentation of tools needed to prepare, validate and program ITER plasma pulses and in the training of new Physics Operations staff.
- Supports team activities efficiently in the relevant area of the ITER Project, specifically on the further refinement of the new baseline ITER Research Plan, particularly in the areas of plasma scenario design and disruptions.
- Collaborates across the ITER Organization and with external stakeholders and networks (e.g. ITPEA, ISFN) to exchange and/or confirm information, particularly in the areas of physics operations, and the control/avoidance/mitigation of disruptions.
- Participates in experimental and modelling activities within the Members' fusion communities concerning the further refinement of the ITER Disruption Mitigation System physics basis.
- Supervises, when required, ITER staff/visiting and postdoctoral researchers/PhD students/ interns contributing to studies in areas of ITER physics operations and disruption avoidance/mitigation.

Please note that job descriptions cannot be exhaustive, and the staff member may be required to undertake other duties, which are broadly in line with the above primary responsibilities.

This position is shift and/or on-call based, and crucial to maintaining continuous operations and ensuring the highest level of service for our stakeholders. This requires shift rotation and/or availability including day, evening, and night shifts, as well as weekends and holidays, depending upon project or team needs.

Experience & Competencies

Essential:

- **Proven experience** in experimental fusion science with some knowledge of tokamak operation and experience in planning, execution and analysis of fusion experiments.
- **Practical familiarity** with tokamak plasma disruptions and disruption avoidance/mitigation.
- **Software:** programming languages commonly used in fusion plasma simulation applications and workflow management (e.g. Fortran, Python, C/C++, Matlab/Simulink).

Desirable:

- Knowledge/experience of the key elements of plasma pulse scenario design.
- Codes and analysis tools addressing experimental aspects of tokamak plasmas, particularly of disruptions 1-D or 2-D reconstruction tools for profiles of plasma parameters, etc.
- Knowledge of real-time control, particularly in the area of magnetic confinement.

- Experience of participation in scientific and/or technology R&D within an international environment.

Qualifications

Essential:

- Master's degree or higher (PhD) in the field of fusion plasma physics or other relevant discipline.
- *The required education degree(s) may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.*

The following items apply to all jobs and job holders for the duration of tenure at ITER Organization:

- **The CARE Values are a framework of principles that guide our actions and define the culture and spirit of the ITER Project:**

Collaboration: We collaborate with commitment and flexibility using the power of teamwork, building partnerships, and working with others to reach shared objectives;

Accountability: We are accountable for the whole project - we take responsibility for our specific actions and are transparent in our daily work, holding self (ourselves) and others accountable to meet commitments;

Respect: We treat each other with respect and dignity at all times, knowing that all of us belong here. We appreciate the value that our multicultural and diverse community brings to the ITER Project;

Excellence: We are driven by excellence; we are agile and innovative while maintaining the highest standards of safety, quality and integrity;

- **ITER Core Technical Competencies**:
  1) **Nuclear Safety, Environment, Radioprotection and Pressured Equipment**
  2) **Occupational Health, Safety & Security**
  3) **Quality Control & Quality Assurance Processes**
- **Knowledge of these competencies may be acquired through on-board training at basic understanding level for all ITER staff members;**
- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- May be requested to perform other duties in support of the project as defined by your line manager, and when relevant upon the request of the matrix manager;
- May be requested to work outside the ITER Organization reference working hours, including nights, weekends and public holidays, due to business needs - this may include on-call, shift work, etc.
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- For staff expected to perform on-call, shift hours, or other work outside ITER Organization reference working hours, including nights, weekends, and public holidays, **the possession of a driving license valid in France is required. no commuting vehicle will be provided by the ITER Organization.**
- Informs management of any important and urgent issues that cannot be handled by line or matrix management and that may jeopardize the achievement of the Project's objectives;

The ITER Organization (IO) is an Equal Opportunity organization committed to diversity and inclusive in the workplace.