

Job Title: Scientific Software Coordinator SCOD-027

Req ID 1143 - Posted 11/12/2019 - (France, 13067 St Paul Lez Durance Cedex) - **Science and Technology Expertise - New Posting**

The ITER Organization brings together people from all over the world to be part of a thrilling human adventure in southern France—building the ITER Tokamak. We require the best people in every domain.

We offer challenging full time assignments in a wide range of areas and encourage applications from candidates with all levels of experience, from recent graduates to experienced professionals. Applications from under-represented ITER Members and from female candidates are strongly encouraged as the ITER Organization supports diversity and gender equality in the workplace.

Our working environment is truly multi-cultural, with 29 different nationalities represented among staff. The ITER Organization Code of Conduct gives guidance in matters of professional ethics to all staff and serves as reference for the public with regards to the standards of conduct that third parties are entitled to expect when dealing with the ITER Organization.

The south of France is blessed with a very privileged living environment and a mild and sunny climate. The ITER Project is based in Saint Paul-lez-Durance, located between the southern Alps and the Mediterranean Sea—an area offering every conceivable sporting, leisure and cultural opportunity.

Application deadline: 26/01/2020

Domain: Science & Operation

Department: Science, Controls & Operation

Division: Science

Section: Plasma Modeling and Analysis

Job Family: Scientific Coordination

Job Role: Coordinating Scientist

Job Grade: P4

Language requirements: Fluent in English (written & spoken)

Contract duration: Up to 5 years

Purpose

As Scientific Software Coordinator, you will lead the technical development of the ITER Integrated Modelling & Analysis Suite software infrastructure;

You will coordinate the preparation and development of integrated physics modelling workflows to support ITER Project activities, including finalization of design and ITER performance predictions;

You will coordinate the preparation of workflows for post-pulse data processing and experimental data analysis;

You will support the implementation and execution of the section work programme, including voluntary R&D programmes in the ITER Members institutions such as the International Tokamak Physics Activities and the ITER Scientist Fellow Network (ISFN).

Major Duties/Roles & Responsibilities

- Defines, manages and delivers a software infrastructure (IMAS) that facilitates the efficient development of high-performance integrated physics modelling and data analysis workflows;
- Integrates software and workflows developed within the ITER Members' R&D programmes to expand ITER's integrated physics modelling and analysis capabilities in accordance with the Project's needs;
- Coordinates the validation of ITER's modelling tools by facilitating the efficient deployment and exploitation on computational resources at the ITER Organization and the ITER Members' R&D institutions (software and documentation);

- Optimizes the infrastructure software stack and physics workflows for performance, maintainability and portability;
- Contributes to the specification of the hardware requirements needed to support the physics modelling and analysis programme;
- Provides expertise, interacts with and co-ordinates experts in the definition, implementation and monitoring of activities in these areas and acts as the principal contact for the Integrated Modelling Expert Group;
- Contributes to and reviews the preparation of documentation relating to physics modelling and analysis;
- Coordinates ITER staff, visiting researchers, and ISFN scientists to contribute to activities in the area of integrated modelling and experimental data analysis and interpretation;
- Provides expert scientific and technical inputs to either resolve key scientific or technical issues or enhance technical decision making;
- Supports the Section Leader in the management of the implementation and execution of the section work programme;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- May be required to work outside ITER Organization reference working hours, including nights, weekends and public holidays.

Measures of Effectiveness

- Conceives and implements effective solutions to scientific modelling problems;
- Interacts with and co-ordinates efficiently experts from within the ITER Members in the definition, implementation and monitoring of activities in this area;
- Effectively supports the schedule & cost for ITER operations by anticipating and solving issues;
- Ensures an efficient team activity in the area of ITER integrated modelling for refinement of the execution of the ITER Research Plan and maintains effective support for ITER construction activities by provision of physics analysis support;
- Develops, implements and executes efficiently within the defined schedule, R&D activities with the international fusion community in support of ITER construction and the preparations for operation.

Experience and Profile

- *Professional Experience:*
 - At least 8 years' experience (10 years' experience without PhD) in software development, model validation, modelling and/or data analysis (Applicants with reduced levels of experience may be considered at a lower grade as indicated on the job website).
- *Education:*
 - PhD or Master degree or equivalent in plasma physics, software development/management or other relevant discipline is required;
 - Publications in recognized scientific journals would be beneficial;
 - The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.
- *Language requirements:*
 - Fluent in English (written and spoken).
- *Technical experience and demonstrated competencies in:*

- Developing software for modelling of physical processes associated with fusion plasmas such as plasma-wall interactions, plasma transport, MHD equilibrium and stability, fast particles, etc;
- The development and/or application of integrated modelling approaches and software infrastructures;
- The development and use of analysis tools for application to experimental data from fusion plasmas;
- Anticipating and solving autonomously technical or complex issues, drawing on experience and expertise;
- Providing expertise, coaching and guidance to other staff;
- Using PCs, including office software;
- Solving problems in high-performance computing environments based on the Linux operating system;
- One or more scientific programming language (e.g. Fortran and Python);

• ***Behavioral Competencies:***

- Collaborate: Ability to dialogue with a wide variety of contributors and stakeholders;
- Communicate Effectively: Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment;
- Drive results: Ability to persist in the face of challenges to meet deadlines with high standards;
- Manage Complexity: Ability to analyze multiple and diverse sources of information to define problems accurately before moving to solutions;
- Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.

The following important information shall apply to all jobs at ITER Organization:

- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, ITER Values (Trust; Loyalty; Integrity; Excellence; Team mind set; Diversity and Inclusiveness) and Code of Conduct;
- ITER Core technical competencies of 1) Nuclear Safety, environment, radioprotection and pressured equipment 2) Occupational Health, safety & security 3) 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 work on beryllium-containing components. In this case, you will be required to follow the established ITER Beryllium Management Program for working safely with beryllium. Training and support will be provided by the ITER Organization;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- Informs the IO Director-General, Domain Head, or Department/Office Head of any important and urgent issues that cannot be handled by line management and that may jeopardize the achievement of the Project's objectives.