

# IO1202 Scientific Coordinator, Stability & Control POP-008

## General information

Job category	Standard
Status	Published
Department	DIP/Directorate for Plasma Operation
Division	POP / Science
Section	POP/ SD/ Stability & Control Section

## Job description

Main job	Science - Plasma physics
Title of the position	Scientific Coordinator, Stability & Control POP-008
Job family	Scientific Coordinator
Grade	P4
Direct employment	Not required
Purpose	<p>To contribute to the analysis of Magnetohydrodynamic (MHD) stability and plasma control for ITER, in particular in relation to the understanding and characterization of plasma phenomena associated with disruptions and vertical displacement events;</p> <p>To refine the specification of performance requirements for the disruption mitigation system (DMS) and to support the Research &amp; Development (R&amp;D) and design activities underway on the DMS;</p> <p>To develop and co-ordinate experimental and modelling R&amp;D activities in the Members' fusion programs aimed at improving the predictive capability for disruption phenomena and the performance of disruption mitigation techniques.</p> <p>Defines and co-ordinate experimental and modelling R&amp;D activities on the study of MHD stability and control in ITER plasmas, with particular emphasis on the modelling and analysis of transient phenomena such as disruptions and vertical displacement events (VDEs), together with the assessment of techniques for their avoidance, control and mitigation;</p> <p>Integrates R&amp;D results and analysis from the ITER Members' programs on MHD stability and plasma control and evaluates their implications for ITER plasma operation scenarios and the performance of in-vessel components;</p> <p>Interacts with and co-ordinates experts in the ITER Members' programs in the definition, implementation and monitoring of activities aimed at improving the predictive capability for MHD instabilities and their impact on ITER hardware systems;</p> <p>Prepares and maintains documentation defining (i) the consequences of disruptions and VDEs in ITER and the associated loads on divertor and first wall components (ii) operational performance requirements of control and mitigation techniques for disruptions, VDEs and associated phenomena;</p> <p>Liaises with ITER construction activities in areas related to MHD instability control systems, particularly avoidance, control and mitigation techniques for disruptions and VDEs, and in relation to the specification of disruption/ VDE impacts on vessel and in-vessel components.</p> <p>Contributes to the specification and analysis of ITER plasma operational scenarios;</p> <p>Contributes to the planning for ITER plasma commissioning and operation;</p> <p>Supervises ITER staff and visiting researchers contributing to studies in areas of ITER physics related to MHD instabilities and their avoidance, control and mitigation;</p> <p>Performs other duties in support of the project schedule as described in the Detailed Work Schedule and the Strategic Management Plan;</p> <p>Performs other duties linked to the above purpose upon management request, as necessary;</p> <p>Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, values and ethics.</p> <p>Develops and implements experimental and modelling R&amp;D programs relating to the development of an improved physics understanding of MHD instabilities, in particular disruptions, VDEs and associated phenomena, in tokamak plasmas;</p> <p>Develops improvements in the predictive capability for loads at the ITER scale associated with disruptions, VDEs and associated phenomena;</p>
Main duties / Responsibilities	

Measures of effectiveness	<p>Effectively implements experimental and modelling R&amp;D activities in support of the development of the necessary ITER capability for the avoidance, control and mitigation of disruption and VDEs;</p> <p>Liaises effectively with relevant operating units within the ITER Organization to support the refinement of load</p> <p>specifications, particularly those associated with transient MHD phenomena, and to support the implementation of techniques for the avoidance, control and mitigation of MHD instabilities;</p> <p>Successfully supports the planning for ITER operation.</p>
	<p>Reports to the Stability and Control Section Leader;</p> <p>Interacts closely with relevant operating units of the ITER Organization and with the ITER Members in the specification, implementation and monitoring of relevant activities;</p> <p>Interacts with project divisions responsible for the procurement of components and sub-systems, in particular in the areas of fuel cycle, vacuum vessel, in-vessel components and superconducting magnets, and with the project's technical integration and systems' analysis activities;</p> <p>Liaises with experts in the international fusion community in the areas of MHD stability, the control of MHD instabilities in fusion plasmas and the implementation of techniques for the avoidance, control and mitigation of MHD instabilities, in particular disruptions and VDEs.</p> <p>In response to requests from the Director-General (DG) and/or Director for Plasma Operation Directorate, or proactively, informs the DG/ Director for Plasma Operation Directorate of any important and urgent issues that cannot be handled by the concerned line management and may jeopardize the achievement of the Project's objectives.</p> <p>SAP ID: 5-079</p> <p>Project Construction Phase</p>

## Applicant criteria

Level of study	PhD or equivalent degree
Diploma	fusion plasma physics
Level of experience	At least 10 years
Technical experience	<p>Expertise in experimental or modelling aspects of fusion physics, with several years' experience in the study and analysis of MHD instabilities in tokamak plasmas, in particular in the analysis of plasma phenomena related to disruptions and VDEs and/ or in the application of techniques for the control and mitigation of disruptions and VDEs;</p> <p>Many publications in recognized scientific journals.</p>
Social skills	Ability to work effectively in a multi-cultural environment , Ability to work in a team and to promote team spirit
General skills	Experience of a project-oriented working environment would be advantageous.
Languages	English (Working)
Specific skills	MS Office standard (Word, Excel, PowerPoint, Outlook)
Free criteria	Knowledge of computational methods for plasma simulation and familiarity with modern scientific data analysis and visualization tools would be an asset.