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Route de Vinon-sur-Verdon - CS 90 046 - 13067 St Paul Lez Durance Cedex - France

ITER Scientist Fellow (Disruption/RE Mitigation Theory and Simulation)

Purpose

The aim of this fellowship is to support the ITER Project and, in particular, the ITER Organization Central Team (IO-CT) through contributions to plasma disruption and runaway electron theory and simulations of ITER disruptions. This involves assessing the disruption loads as well as the efficiency of their mitigation by impurity injection either by massive gas injection or shattered pellet injection. The particular work involves close collaboration with the IO-CT and with experimental efforts performed within the ITER Members' fusion community and with the relevant ITPA activities.

Major Activities

- Performs simulations of disruption and runaway electron physics in ITER plasma scenarios, with specific emphasis on the physics of disruption and runaway electron mitigation;
- Advances theoretical understanding of disruption physics with emphasis on disruption loads and their mitigation, on runaway electron generation, stability, and associated heat loads, as well as on the runaway electron mitigation or suppression scheme;
- Contributes to the interpretation and the understanding of dedicated disruption and runaway electron experiments at the devices run in the ITER Member states;
- Contributes to the development of disruption mitigation schemes for ITER and supports the design process of the ITER Disruption Mitigation System by dedicated simulations in one or more of the following areas: flow dynamics, impurity penetration processes, disruption dynamics including the evolution of currents and forces.

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Qualifications and Experience

- ***Education/ Know-How:***
  - Extensive experience in the theory and simulation of plasma disruptions and runaway electrons and mitigation of their consequences.
- ***Technical experience:***
  - Deep knowledge of plasma disruption and RE processes in fusion plasmas, as evidenced, eg, by many publications in recognized scientific journals.
- ***Social skills:***
  - Ability to communicate effectively;
  - Ability to work effectively in a multi-cultural environment;
  - Ability to work in a team and to promote team work.
- ***Language requirements:***
  - Fluent in English (written and spoken).
- ***Computer and IT skills:***
  - Expertise in numerical techniques for the implementation of sophisticated plasma simulation and analysis tools is essential.