



OFFRE DE STAGE / ALTERNANCE

* Champ bloquant

Information générales

Entité de rattachement*	SPPF/GMICS
Référence interne/ Plan Emploi	Sans objet
Description de l'unité	<p>The Institut de Recherche sur la Fusion par Confinement Magnétique (IRFM) is part of the Fundamental Research Department at CEA. For more than 50 years, it has been its mission to drive research on a novel energy source, magnetic confinement fusion, by participating in the European fusion programme. IRFM is located at the Cadarache CEA research centre. Its activities are structured around three axes :</p> <ul style="list-style-type: none">- contribute the ITER project and the accompanying programme (mainly the JT-60SA tokamak),- prepare the scientific ITER operation through experiment and control activities as well as theory and modelling,- establish a sound basis for a future nuclear fusion reactor. <p>These activities are intimately connected with a particular effort of training future generations of fusion physics and technology experts. IRFM maintains and uses numerous R&D and test platforms, among which the main one is the WEST (Tungsten (W) Environnement Steady-State Tokamak) tokamak, designed as a testbench for ITER. It allows to test one of the key ITER components and to pursue plasma physics research in an international context, thanks to the numerous collaborations with the fusion teams worldwide.</p>
Délai de traitement	3 mois

Description du poste

Domaine*	Physique du noyau, atome, molécule
Intitulé de l'offre*	Dynamics of a runaway electron beam in the presence of RF waves
Sujet de stage*	<p>The runaway electrons exceeding several tens of MeV created during a major disruption of a tokamak plasma represent a major threat, in particular for the ITER reactor. In this context, various solutions are considered to prevent its formation, or at least to slow it down. The dynamics of these electrons are described by kinetic calculations which are carried out using a 3-D relativistic Fokker-Planck code. The objective is to identify the regimes for which a beam of runaway electrons can be created and be maintained in different tokamaks, then to explore the impact of RF waves on its dynamics. The internship will be based on the use of existing and validated numerical tools (LUKE kinetic code, C3PO ray tracing code) in Matlab and linux environments. The internship is mainly numerics, where script development will be essential to carry out the planned study.</p>
Description de l'offre*	
Moyens / Méthodes / Logiciels	Matlab numerical codes, linux environment
Profil du candidat	Very good plasma knowledge in plasma physics, statistical physics, electromagnetism and also it and computing.

Localisation du poste à pourvoir

Site	Cadarache
Lieu	F-13108 SAINT PAUL LEZ DURANCE cedex

Critères candidat

Diplôme préparé	Bac+5 - Master spécialisé
Formation recommandée	Kinetic physics, electromagnetism, plasma physics
Possibilité de poursuite en thèse	<input type="checkbox"/> Oui

Programme

Segment CEA	Fusion nucléaire
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Langues

Langues souhaitées*	Anglais
Niveaux*	Courant

Suivi RH

Suivi par (nom du tuteur)	
Disponibilité de poste*	