

Subprojet 5 “Physique des plasmas de Fusion - projet ITER”

French Partner

- LPMIA – Institut Jean Lamour Nancy Université Nancy

Russian partners :

- Ioffe Physico-Technical Institut, St Peterburg E. Gusakov, S. Surkov, A. Popov.
- Russian Research Centre Kurchatov Institute, Moscow, D. Shelukhin

Context: For several years the LPMIA UMR7040, member of the federation of research CNRS on the materials “Jean Lamour” has maintained the relations followed with IOFFE Institut St Petersburg in the field the theory the diagnoses by waves fluctuating plasmas and more particularly on the characterization the fluctuations of density associated with the properties of abnormal transport in plasmas with fusion. This work already gave place to 4 stays of Russian scientists, one month on a post of professor invited to the UHP and stay of a one month post-doctorand with the LPMIA.

The imminent launching of project ITER will lead to a strong increase in the research activities in the fields which concern some. In France the site of Nancy constitutes one of the three principal research centres academic in the field, with the Polytechnic school of Palaiseau and the universities of Marseilles. The Marseilles colleagues also have a strong tradition of collaboration with Russia in this field. Taking into account the leading role that the Russian teams in the program play, of already existing collaborations and the workload planned in particular for the development of the diagnoses of ITER, program ARCUS Lorraine-Russia can give a support determining and contribute in a way essential with the reinforcement of the role of the Lorraine teams in program ITER. A possible contribution of area PACA would make it possible moreover to reinforce Lorraine collaborations - PACA - Russia. This action arrives at point named to develop the basic research within the framework of project ITER.

In addition the piloting of a nation program of pluriformations (PPF)l, intended to coordinate and support the formation at the doctoral level for ITER is ensured by the University Henri Poincaré.

Beside the specifically physical set of themes of plasmas of fusion, project ITER contains moreover a very strong component of science of materials, so that program ARCUS should allow the development of new collaborations Lorraine - Russia and support the entry of new Lorraine teams in the project.

Research project:

According to the existing relations and motivations of the partners, the pilot project by the Federation of research FR CNRS 2797 will be articulated as follows:

- Diagnosis of turbulence and wave propagation in the fluctuating mediums.
- radiative properties of plasmas except balances. This second project would imply the participation of area PACA.

In the event of abandonment of the project by area PACA, the specifically Lorraine part has nevertheless a sufficient coherence to be presented only.