

Post-doctoral positions available at the Plasma Physics and Electromagnetism Group
of the Theoretical and Applied Physics Department
CEA DAM-Île de France
France

As part of the CEA DAM-Île de France centre, the Plasma Physics and Electromagnetism (PPE) Group of the Theoretical and Applied Physics Department is particularly in charge of the modelling and simulation of particles, waves, and plasmas, and their interactions. Theoretical models together with specific codes are developed in our group to improve the understanding of the physical phenomena involved. Experiments are specially designed to benchmark the new models and are carried out on national (LIL, LULI, LOA...) or foreign facilities including the OMEGA (US) and GEKKO XII (Japan) laser facilities. The PPE group also operates a 19 MeV electron Linac devoted to irradiation of materials and improved radiography facility design.

For all these studies, extensive use is made of the large computational resources available on site, with the TERA10 and CCRT computers.

Many members of the group are involved in the French effort on laser-plasma science (Institut laser-plasma, ILP) and have developed fruitful and active collaborations with the international plasma community.

Recent references

- L. Lecherbourg et al, High Energy Density Physics **3**, 175 (2007)
- J. Dubau, C. Blancard, and M. Cornille, High Energy Density Physics **3**, 76 (2007)
- B. Louprias *et al*, Physical Review Letters **99**, 265001307 (2007)
- S. Bouquet et al, Math. Methods Appl. Sciences 30(16), 2027 (2007)
- L. Bergé *et al*, Rep. Prog. Phys. 70, 1633-1713 (2007)
- T. Ceccotti *et al*., Physical Review Letters **99**, 185002 (2007)
- L. Gremillet, D. Bénisti, E. Lefebvre, and A. Bret, Physics of Plasmas **14**, 040704 (2007)
- D. Bénisti, D. Strozzi, and L. Gremillet, Physics of Plasmas **15**, 030701 (2008)
- B. Canaud *et al*, Nucl. Fusion **47**, 1652 (2007)
- V. Le Flanchec *et al*, Journées accélérateurs de la SFP, Roscoff, 14-17/10/2007

The post-doctoral positions available cover various research topics of our group: atomic physics and properties of multicharged ions in plasmas (spectral opacities, equations of state, NLTE physics), laser-matter interaction, from moderate-intensity, nanosecond-duration laser pulses (laser material damage, parametric instability modelling for Inertial Confinement Fusion science) to short-duration, ultra-high intensity pulses (Fast Ignitor physics, high-energy particle acceleration, X-ray sources...), and multi-dimensional hydrodynamics for laboratory astrophysics and ICF studies. The typical duration is one year, and can be extended to two years.

Qualifications: PhD degree required

Disciplines: plasma physics, atomic physics, astrophysics

This appointment is open to all qualified citizen (from France or abroad) provided approval by the security authority.

The CEA DAM-Île de France centre is one of the 4 centres of the Military Applications Division (DAM) of CEA and is in charge of fundamental research ranging from nuclear

physics to multidimensional radiation hydrodynamics through material and plasma behaviour under extreme thermodynamical conditions. This research covers all the range from advanced theory to sophisticated experiments through complex system simulation and computing science. The centre is located 30 km south of Paris and can be easily reached by public transportation.

For more information or to apply, please contact L. Bonnet (tel: +33169264000; email: laurence.bonnet@cea.fr)

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