

Postdoctoral Research Associate in Computational Plasma Physics
Department of Nuclear, Plasma, and Radiological Engineering
University of Illinois at Urbana Champaign

The Laboratory of Computational Plasma Physics (LCPP) at the University of Illinois at Urbana Champaign (UIUC) is looking to fill in a full-time position at the Post-doctoral Research Associate level, who will work on the development of large-scale High-Performance Computing Particle-in-Cell codes for Fusion Plasmas and Plasma-Material Interaction applications.

Employer

University of Illinois at Urbana Champaign, Laboratory of Computational Plasma Physics, Prof. D. Curreli

Job Type

Post-doctoral Research Associate

Position Responsibilities

Candidates are sought for a Postdoctoral Research Associate position in the Lab of Dr. Curreli in the UIUC Department of Nuclear, Plasma, and Radiological Engineering. LCPP at Illinois is seeking a highly motivated individual to develop large-scale Particle-in-Cell codes and associated software, for modeling the plasma boundary and plasma-surface interactions of magnetic fusion reactors. The candidate will extend the current capabilities of Particle-in-Cells developed at LCPP and develop coupling methodologies to existing Plasma Boundary Particle-in-Cell codes. The successful candidate will interact with students and faculty at UIUC, as well as computational physicists and computer scientists at partner universities and DOE national laboratories. The position is rich with opportunities and collaborations, including attendance at scientific meetings; leadership of manuscript writing; co-mentoring of students; extensive career mentorship and networking.

Disciplines

Computational Plasma Physics, Plasma Surface Interactions, High Performance Computing

Qualifications

The candidate should hold a PhD in Computational Physics, Computer/Computational Science, Applied Mathematics, or related engineering or science discipline. A working knowledge on modern Software Engineering, High-Performance Computing, and Particle-in-Cell methods is necessary for this position. Knowledge on the following subjects is also considered a plus: plasma surface interactions, sputtering physics, sputtering chemistry, material erosion, surface evolution under plasma irradiation, magnetized plasma sheaths, scrape-off layer, plasma boundary. Additional desired skills are:

- Development and optimization of Particle in Cell methods (PIC) on large-scale computational facilities
- Parallel programming (MPI, OpenMP) and High Performance Computing
- Plasma Material Interactions
- Plasma Boundary in Magnetic Fusion Machines
- Working knowledge of C, Fortran, Python, UNIX operating systems and Bash scripting

Start Date

The position is available starting September 1st 2017.

Salary and Expected Duration of the Position

\$47,000 or competitive and commensurate with experience. Review of applications will commence immediately and continue until the position is filled. Duration 1-2 years.

Application Instructions

To apply please email the following items to dcurreli@illinois.edu, with the subject "UIUC LCPP Post Doc applicant":

- (1) Cover Letter, including your email, contact address, telephone number, and a description of how your qualifications would meet the position responsibilities;
- (2) A copy of your latest CV
- (3) Names and email contacts of at least three references;

All applications should be submitted electronically (paperless process) via one (all combined) PDF document of less than 5 Mb.

Specific questions about this position should be directed to: Prof. Davide Curreli (dcurreli@illinois.edu), Department of Nuclear, Plasma, and Radiological Engineering, University of Illinois at Urbana Champaign. More information about the Department of Nuclear, Plasma, and Radiological Engineering can be obtained at the following website <http://npre.illinois.edu/> and for University of Illinois at Urbana Champaign information, please visit <http://illinois.edu/>.

The University of Illinois conducts criminal background checks on all job candidates upon acceptance of a contingent offer. The University of Illinois is an Equal Opportunity, Affirmative Action employer. Minorities, women, veterans and individuals with disabilities are encouraged to apply. For more information, visit <http://go.illinois.edu/EEO>. To learn more about the University's commitment to diversity, please visit <http://www.inclusiveillinois.illinois.edu>.