

PhD student positions in theoretical plasma physics

Applications are invited for Ph.D. student positions at the Swiss Plasma Center (SPC) of the Ecole Polytechnique Fédérale de Lausanne (EPFL). The proposed research activities are focused on the simulation and improvement of physics understanding of plasma turbulence at the edge of magnetic fusion devices.

Understanding turbulence at the edge of magnetic confinement device is an outstanding open issue in magnetic fusion. The physics of this region determines the boundary conditions of the whole plasma by controlling the plasma refueling, heat losses, and impurity dynamics. Edge dynamics regulates the heat load on the vessel walls. This is considered among the most crucial open problems for ITER and future fusion reactors. Since a few years, a project started at the SPC with the goal of improving the understanding of edge physics. This effort has significantly advanced our grasp of plasma turbulence at the edge of a relatively simple configuration, the circular limited tokamak, and we are now exploring the physics of diverted configurations. The open Ph.D. positions target to bring our current numerical simulation tools and physics understanding to reactor relevant conditions, in particular by considering improved plasma models and advanced exhaust configurations.

Applicants should hold a Master (or equivalent) degree, or should expect to hold such a degree by the start of employment, in Physics, Applied Mathematics, or a related field. The application procedure is described at https://spc.epfl.ch/education/education_doctoralschool/page-104046-en-html/page-104051-en-html/. More information can be obtained from Prof. Paolo Ricci (paolo.ricci@epfl.ch). Review of applications will continue until the positions are filled.