What is CoMe?

CoMe is the name for a seminar series. It is born with the philosophy of being an open lunchtime meeting for PhD students, professors and applied mathematics enthusiasts from everywhere. Join us and share a delicious snack followed by a first class seminar talk surrounded by a friendly atmosphere of learning and discussion.

Abstract

Nuclear fusion is considered a safe and clean option for the future human energy supply. However, its possible exploitation depends on the progress of new technologies which are still under development. In this design process, a numerical laboratory is crucial. In this talk we focus our attention on two emergent technological challenges: the stability of the plasma inside the DEMO Tokamak and the design of the breeding blanket modules that will extract Tritium and heat from the ITER and DEMO reactors.

In the first part of the presentation, we will introduce the complex physical models that govern these phenomena. We will show the kinetic theory of plasmas and how it can be approximated by fluid model approximations: two-fluid models and magneto hydrodynamics (MHD). Also, we will discuss the MHD systems to be used in the simulation of the breeding blankets. The presentation will end up with a discussion focused on the requirements for large-scale realistic fusion reaction simulations.

Please check the full abstract at www-lacan.upc.edu

Next Meeting:
Friday, September 30, 2011
13.30h

Location:
Room 212, C2 Building
Campus Nord UPC

Contact us:
Feel free to leave us your doubts and suggestions at come.seminars@upc.edu.