Tipo di tesi: Laurea Magistrale

Corso di Laurea: Fisica

Tipologia: Modellistica

Titolo della tesi: Real-time modelling of DTT scenarios

Proponente: Lidia Piron

Relatore Accademico: Lidia Piron

Capogruppo: David Terranova

Argomento della tesi:

- Motivation:
  For future large tokamak operations it will be increasingly important to have a real-time control-oriented simulation code capable of augmenting the diagnostic insight on the plasma with model-based predictions of its state.
- Strategy:
  The control-oriented 1D transport code RAPTOR will be applied to model the plasma scenarios of the Divertor Tokamak Test (DTT) facility, the brand-new Italian fusion experiment that is under construction in Frascati (Roma).
  Through this project, the student will:
  - be introduced to the RAPTOR code and the DTT experiment
  - develop her/his knowledge on tokamak plasma scenarios
  - mature a critical understanding of the potentialities and the limits of control-oriented predictive modelling.
- Framework of the study: Università degli Studi di Padova, Consorzio RFX, ENEA, DTT

Competenze richieste (se necessarie):

Ambienti Python, Matlab.

Conoscenza degli argomenti trattati nei seguenti corsi della Laurea Magistrale in Fisica:

- Physics of fluids and plasmas

- Physics of nuclear fusion and plasma applications

Data della proposta: 15/09/2021

Stato: non assegnata

Laureando/a: ….