Tipo di tesi: Triennale
 Corso di Laurea: Fisica
Tipologia: modellistica
Titolo della tesi: Numerical simulations of Glow-Discharge Conditioning (GDC) for RFX-MOD 2
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Argomento della tesi: In the RFX-MOD 2 experiment, the inner surfaces of the toroidal chamber are covered with graphite tiles. Graphite is a porous material, thus it can easily absorb impurities that are subsequently re-emitted during the plasma discharge mainly because of the ion flux impacting on the walls. The Glow-Discharge Conditioning (GDC) is a pre-conditioning method for removing impurities from the vessel surfaces before the actual operations: it envisages a preliminary helium plasma discharge for "cleaning" the graphite tiles. The purpose of this thesis is a numerical analysis of the GDC applied to RFX-MOD 2 by means of a two-dimensional Particle-In-Cell (2D3V PIC-MCC) code written in C++/CUDA. The discharge will be simulated while varying some physical parameters such as the pressure or the number of anodes. Such analysis will be useful for the experimental implementation of a GDC system in RFX-MOD 2.
Competenze richieste (se necessarie):
- conoscenza base della fisica dei plasmi;
- conoscenza base del linguaggio di programmazione C++;

Non sono richieste competenze di programmazione in CUDA (verranno acquisite durante il lavoro di tesi).
Data della proposta: 14/01/2021
Stato: (assegnata/non assegnata)
Laureando/a: (quando sarà assegnata)