Tipo di tesi: magistrale Corso di Laurea: Fisica Tipologia: Analisi dati Titolo della tesi: Effects of microtearing modes on energy confinement properties of Reversed-Field Pinch (RFP) plasmas Proponente/Relatore RFX: M. Zuin Relatore Accademico: M. Zuin Capogruppo: Zuin Responsabile di Programma: Marrelli Argomento della tesi: Within the magnetic spectrum of magnetic fluctuations in the Reversed Field Pinch configuration for the

Within the magnetic spectrum of magnetic fluctuations in the Reversed Field Pinch configuration for the magnetic confinement of thermonuclear plasmas, small scale coherent modes (with wavelengths of the order of the ion Larmor radius) are found to be destabilized by strong pressure gradients during improved confinement regimes.

The thesis work will focus on the (still undetermined) role played by these coherent microtearing modes in modifying the energy confinement time. The investigation will be based on the analysis of the data coming from highly resolved both in time and space systems of magnetic probes located inside the vacuum vessel of the RFX-mod experiment.

In particular, the isotope effect on the spectral properties of small scale instabilities will be investigated by comparing plasmas produced with Hydrogen and Deuterium as working gases.

Competenze richieste (se necessarie): Data della proposta: 24/05/2022 Stato: non assegnata Laureando/a: (quando sarà assegnata)