Abstract Submitted
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Gyrokinetic investigation of ITG turbulence in helical RFPs I. PREDEBON, Consorzio RFX, Padova, Italy, P. XANTHOPOULOS, Max Planck Institute for Plasma Physics, Greifswald, Germany, D. TERRANOVA, Consorzio RFX, Padova, Italy — Micro-instabilities in reversed field pinch (RFP) plasmas have been investigated in the last years from several viewpoints and with various numerical tools. So far, axisymmetry of the magnetic equilibrium has always been postulated. Nevertheless, experimental evidence suggests that the physical conditions mostly favoring the onset of electrostatic/electromagnetic turbulence, e.g., the occurrence of large pressure gradients, emerge when magnetic surfaces become helical, during the single helicity states [1]. In this work, we investigate ion-temperature-gradient driven turbulence focusing on the 3D feature, with the aim to describe its distinct properties compared to the axisymmetric geometry. For this study, we will apply the 3D nonlinear gyrokinetic code GENE [2,3] to RFP equilibria generated by the VMEC code.

[1] Carraro et al, Nucl. Fusion 53, 073048 (2013);
[2] http://www.ipp.mpg.de/∼fsj/gene;
[3] http://www.ipp.mpg.de/∼pax

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