Abstract Submitted
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Gyrokinetic Simulations of Impurity Seeded C-Mod Ohmic Plasmas[1] MIKLOS PORKOLAB, PAUL ENNEVER, JOHN RICE, J. CHRIS ROST, EVAN DAVIS, DARIN ERNST, CATHERINE FIORE, AMANDA HUBBARD, JERRY HUGHES, JIM TERRY, MIT, NAOTO TSUJII, University of Tokyo, JEFF CANDY, GARY STAEBLER, General Atomics, MATTHEW REINKE, University of York, AND ALCATOR C-MOD TEAM — Ohmic plasmas on C-Mod were seeded with nitrogen to study the impact of dilution in the LOC (linear ohmic) and SOC (saturated ohmic) regimes [1]. The seeding decreased ion diffusivity and caused the rotation to reverse in certain cases. TGLF, TGYRO, and global GYRO simulations were performed on these plasmas, simulating both the transport and the density fluctuations. TGYRO simulations using TGLF showed that the ion temperature profile only needed slight modification to get agreement with the heat flux, and the electron temperature profile needed almost no modification. However, when these TGYRO modified profiles were simulated with global GYRO the ion and electron fluxes were much lower than the experimental measurements and the TGLF simulated fluxes. The average of the TGYRO and experimental profiles gave ion fluxes that agreed with the experimental fluxes, and the density fluctuations agreed with PCI measurements. The electron flux from GYRO is below experimental levels, and since these plasmas have little TEM turbulence ETG simulations are being performed to make up the difference. Results will be presented.

[1] M. Porkolab, et. al. PPCF, 54, 124029 (2012).

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Miklos Porkolab
MIT

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