

TH/P2-30 Gyrokinetic Simulations of Tokamak Pedestals and Extrapolation to ITER

- The first nonlinear gyrokinetic simulations of pedestals
- The first quantitative calculation of ExB shear suppression of pedestal turbulent transport
- Includes extensive JET simulations (JET-ILW and JET-C)
- With strong velocity shear, ETG plus micro-tearing can explain pedestal transport (not KBM)
- JET-ILW: first device where velocity shear is sometimes not strong enough to strongly suppress ITG
- Parametric trends qualitatively consistent with low pedestal temperatures in JET-ILW
 - Consistent with multiple observations
 - Low Z impurities, separatrix density (puffing/pumping), β_N
- ITER is more strongly in this regime
- Overcoming low velocity shear appears possible, by operation outside conventional modes
- JET-ILW is the only current device that can examine this essentially new ITER-like regime

