

Gyrokinetic Simulations of Microturbulence in DIII-D pedestal

- Gyrokinetic simulations of DIII-D pedestal turbulence are performed in the presence of RMP (excluding magnetic islands) and fixed equilibrium profiles.
- Electrostatic ITG/TEM is dominant at the pedestal top.
- Electrostatic turbulence is not significantly affected by RMP
- KBM is marginally stable in the maximum gradient region of DIII-D pedestal; Transition from TEM to KBM occurs at $\beta_e \sim 0.15\%$
- KBM stability is not significantly affected by RMP
- **Conclusions:** Transition to ELM suppression cannot be due to the direct effect of the ideal MHD plasma RMP response on electrostatic or electromagnetic modes. This leads to one of two remaining possibilities: (i) that the ideal MHD response of the plasma affects a different (nonturbulence) transport channel, and/or (ii) that nonideal effects associated with the formation of resonant internal fields play a dominant role in the changes to edge transport leading to profile modification and the ELM suppression