Feedback of a neoclassical tearing mode on drift wave – ZF turbulence

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1) 0D and 1D predator-prey model with NTM feedback

2) Zonal Flows limit saturated turbulence level

Thus destabilize NTM

3) Implicit onset criterion

\[ W_{seed} \geq \left[ \frac{\chi_{turb}(W_{seed}, \beta_p)}{\chi_{||}} \right]^{1/4} \]

4) for a given seed, onset Beta determined by neoclassical ZF damping

\[ \beta_p \sim \nu_{ii}^{1/2} \]