A reduced kinetic model for resistive wall mode stability has been implemented in new DECAF code

Disruption Event Characterization And Forecasting (DECAF) code

- Written to identify disruption event chains
- Reduced marginal stability model from kinetic RWM theory implemented in this framework
- Goal is to forecast γ in real-time using parameterized reduced models for δW terms

J.W. Berkery, S.A. Sabbagh, et al.
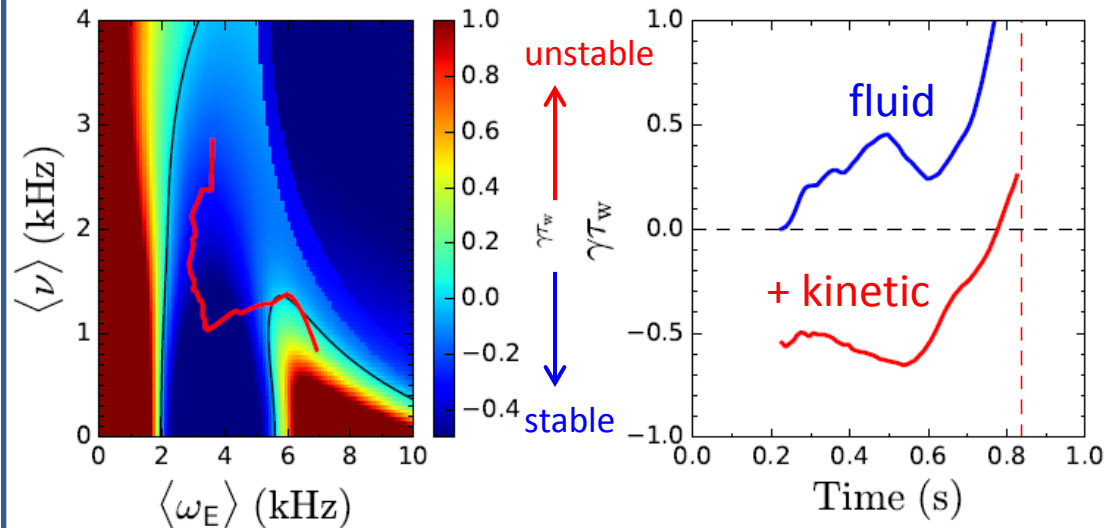
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PPPL   NSTX-U

RWM dispersion relation

$$(\gamma - i\omega_r)\,\tau_w = -\frac{\delta W_\infty + \delta W_K}{\delta W_b + \delta W_K}$$

Fluid terms   Kinetic effects:

Reduced Kinetic Model

"Characterization and Forecasting of Unstable Resistive Wall Modes in NSTX and NSTX-U", Poster: Wednesday Afternoon (P4), Paper: EX/P4-34