

# Extension of kinetic-MHD model to include toroidal rotation shear effect

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Energy exchange between MHD modes and particles' motion,  $\delta W_k$ , is generalized by introducing sheared equilibrium rotation.

$$\begin{aligned}
 \delta W_k &= \delta W_{k0} && : \text{conventional} \\
 &+ \delta W_{k1} && : \text{Coriolis} \\
 &+ \delta W_{k2} && : \text{centrifugal} \\
 &+ \delta W_{k3} && : \text{rotational modification to equilibrium distribution function}
 \end{aligned}
 \left. \vphantom{\begin{aligned} \delta W_k \\ \delta W_{k1} \\ \delta W_{k2} \\ \delta W_{k3} \end{aligned}} \right\} \text{generalized guiding center Lagrangian}$$

= *new terms*

RWM growth rate vs. rotation shear at  $q=2$  for conventional and extended kinetic-MHD model. Extended model shows enhancement of stabilization effect of rotation shear.

