

# Progress on Transport Modeling by Trapped Ion Resonance Driven Turbulence

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- For trapped ion turbulence with Kubo  $\# > 1$ , precession resonance persists and clusters of resonant trapped ions, *granulations*, are likely to form.
- Basic scales, life time, correlation at small scales, impact on transport are formulated.  
*Transport modeling beyond simplified quasilinear theory necessary.*
- Application to **toroidal momentum transport** is discussed. Contribute to **residual stress**, by converting poloidal flows into toroidal flows. Can accelerate toroidal flow to Mach  $O(0.1)$ .
- Competition of  $E \times B$  mixing, shearing, toroidal precession was formulated.

