Three-dimensional numerical analysis of interaction between plasma rotation and interchange modes


- **Purpose**: To analyze the plasma flow effects on the MHD stability of interchange mode.

- **Simulation Results**:
  - Numerical scheme to calculate 3D ExB flows consistent with 1D LHD experimental data is established.
  - The 3D flow is utilized in the nonlinear MHD dynamics calculation for a strongly unstable equilibrium.
    - Without the flow: Pressure profile strongly collapses.
    - With the flow (200 times larger): Pressure collapse is reduced.

- **Summary**
  - The 3D plasma flow profile consistent with the experimental data is obtained.
  - The flow can reduce the pressure collapse caused by the interchange mode.