

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

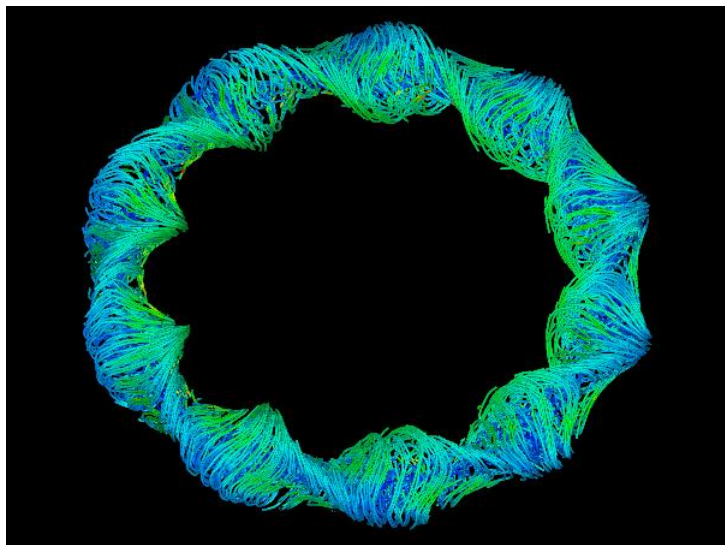
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➤ **Purpose** : To analyze the plasma flow effects on the MHD stability of interchange mode.

➤ **Simulation Results:**

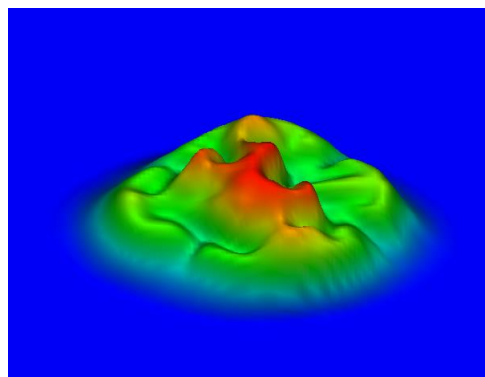
▶ Numerical scheme to calculate 3D ExB flows consistent with 1D LHD experimental data is established.

Stream lines of the flow are plotted.

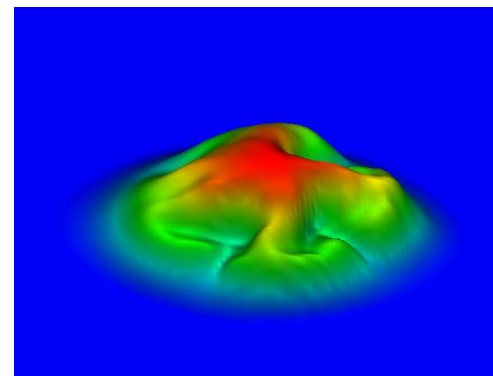


▶ The 3D flow is utilized in the nonlinear MHD dynamics calculation for a strongly unstable equilibrium.

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.