

Key achievements in contribution TH/P3-46

- Construction of MHD linear and nonlinear translational symmetric and axisymmetric ITER-like equilibria with sheared plasma flow.
- For flows parallel to the magnetic field study of linear stability.
- Stabilization is mainly caused by the variation of the magnetic field perpendicular to the magnetic surfaces related to the magnetic shear.
- Depending on the Mach function profiles and the values of the free parameters, the flow and flow shear may have a weaker stabilizing effect.
- In certain cases stability is improved by the equilibrium nonlinearity, is affected by the plasma shaping and is sensitive to even small up-down asymmetry.
- The results indicate synergetic effects of magnetic shear and sheared flow in connection with the L-H transition and the formation of Internal Transport Barriers of ITER pertinent plasmas in consistence with experiments.