
GAM spectra (Fig. left) of ASDEX Upgrade inverted temperature profiles [Lauber2013] and analysis of energetic-particle driven GAM.

Ion-temperature-gradient modes in CYCLONE equilibrium, for linear (Fig. center) and nonlinear [Bottino2011] electromagnetic simulations.

Alfvén eigenmodes (Fig. right) investigated with NEMORB, EUTERPE [Kornilov2004, Mischenko2008] and XHMGC [Briguglio1995, Wang2011].

Future modeling: selfconsistent gyrokinetic simulations of burning plasmas → energetic particles with global instabilities and turbulence.