

R.Kleiber
Max-Planck-Institut für Plasmaphysik
Wendelsteinstraße 1
17491 Greifswald
Germany

Results from simulations of linear electrostatic ITG instabilities with adiabatic electrons are presented. Using a PIC method the gyrokinetic equation is solved globally for fully three-dimensional equilibria using the code EUTERPE. The structurally very different equilibria of Wendelstein 7-X, as an example of an optimized stellarator, and LHD, as a running experiment, are of special interest. Mode structure and driving mechanism for ITG modes found in these equilibria for constant density and different plasma β are discussed. Stellarators naturally possess a strongly sheared neoclassical radial electric field which may have influence on ITG modes. Using a simple model the radial electric field is determined by its balance with the pressure gradient. In the framework of this model the influence of a neoclassical electric field on ITG instabilities is investigated for tokamaks and stellarators.