

Abstract Submitted
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The effects of safety factor value at pedestal on the MHD stability of ITER H-mode confinement¹ LINJIN ZHENG, M. T. KOTSCHENREUTHER, P. VALANJU, Institute for Fusion Studies, University of Texas at Austin — MHD stability of ITER H-mode confinement is investigated with bootstrap current included for equilibrium for various scenarios. We construct ITER equilibria numerically using CORSICA code and study the stability using AEGIS code. The direct consequence of bootstrap current effects on equilibrium is the modification of local safety factor profile at pedestal, so that the magnetic shear can be reduced or reversed locally. This local q value is referred to as q_s . This q profile change results in a dramatic change of MHD mode behavior. Both low- n and peeling-ballooning modes are investigated. It is found that the pedestal stability depends not only on the edge current (J_{ped}) and pressure gradient (p'_{ped}), but also on the q_s value. This shows that the pedestal stability can be affected by the global parameters, not just the local ones at pedestal. Both numerical scheme and results will be presented. The physical interpretation will be explained.

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