

The I-mode confinement regime is distinct from various H-mode regimes in that it develops a pedestal in temperature but density does not change from L-mode. That is, an energy but not a particle transport barrier forms. It is of interest both as a potential fusion regime – with increased energy confinement but no impurity accumulation or ELMs – and for insight into confinement transitions. The conditions to access I-mode, usually with ion $B \times \nabla B$ away from the active X-point, will be described. The transition to I-mode is often more gradual than L-H mode. Power threshold varies weakly with B, and does not have hysteresis. Several changes in turbulence typically occur, including reductions in some parts of the spectrum and the appearance of both a broad ‘weakly coherent mode’ and a coherent ‘Low Frequency Edge Oscillation’ in the GAM frequency range. Their role in transport is still uncertain. The upper limit to power and energy in I-mode is set by I-H transitions, leading to a higher power range at high magnetic field. The talk will compare conditions at L-H and I-H transitions, which pose some challenges to common H-mode criteria, and discuss recent proposed models for I-mode turbulence.