

Plasma density measurements using the H-1 scanning far-infrared interferometer

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We present experimental measurements of the electron density profile and its temporal evolution for discharges in helium/hydrogen under resonant ion and electron cyclotron heating in H-1 at fields near 0.5 Tesla. Simple parametric studies reveal the resonant nature of the plasma formation and its dependence on magnetic configuration.

The data is also used to study plasma formation and temporal evolution for both static fill and gas puff fuelling. These studies are important to elucidate the cooling/fuelling effects of the neutral flux into the plasma from the natural gas reservoir resulting from the coil-in-tank H-1 construction.