

HHFW Heating Physics Experiment Ideas



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“Internal transport barrier” formation with HHFW



We've seen this happen in a **FEW** shots.

Goal here would be to try to reproduce these shots; if successful, explore operating window of ITB's with HHFW and find out what parameters ITB formation is sensitive to.

H-mode power scan



In H-mode the edge fluctuations are observed to decrease.

IF rf power is still limited, the idea here is to get into H-mode with a moderate amount of HHFW power, then increase the power once in H-mode. Matching should be optimized for H-mode operation. If fluctuations in the plasma edge are causing a problem for the HHFW antennas, it might be that we could run at higher power once the fluctuation level is reduced via H-modes operation.

Measurement of rf fields using UCLA and ORNL reflectometers



This would require the UCLA and/or the ORNL reflectometer to be set up to measure rf field amplitude (i.e., detecting the 30-MHz component of the phase fluctuations). If one or both diagnostics become able to do this during the next year, then this would be a good experiment to do. Probably piggy-back for initial data, but then might need some dedicated run time.