

L-H Threshold Power Study

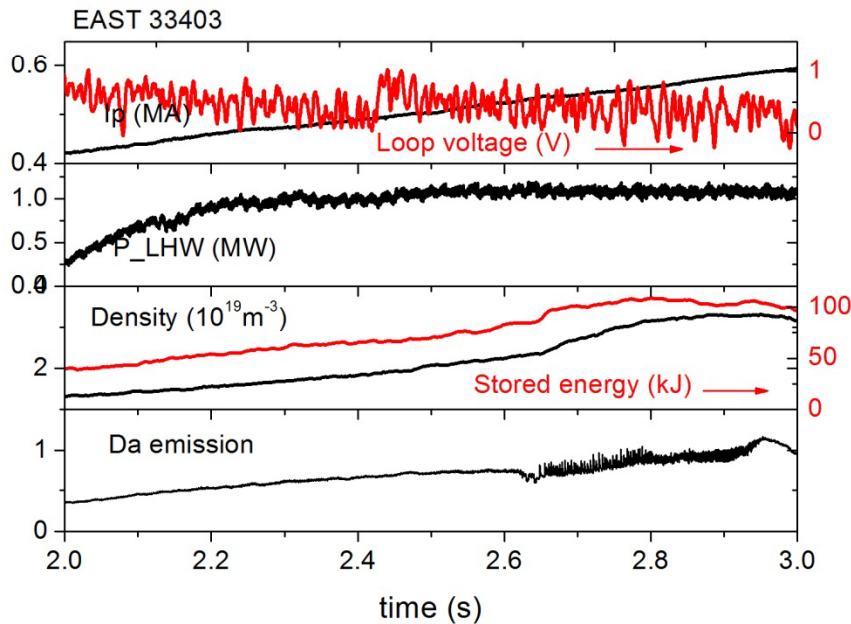
- Ramp-Up vs Steady I_p Phase -

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Objective is to determine P_{LH} in ramp vs steady conditions at constant I_p

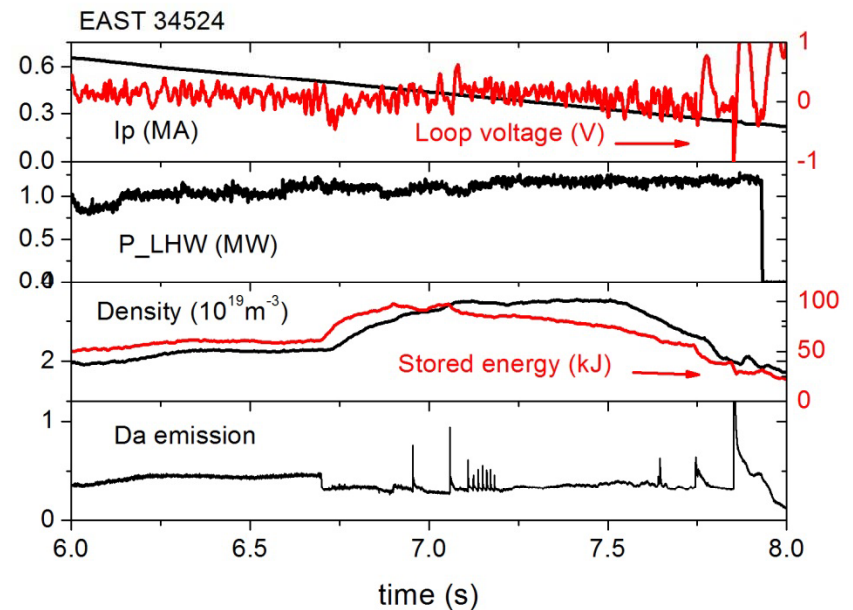
- High priority issue for ITER
 - Implications for scenario development, heating power systems
- ITPA Joint Expt: PEP-33
 - Along with C-Mod, DIII-D, EAST and TCV
- Preliminary experiments already performed on EAST
 - Found slightly higher P_{LH} during ramp-up phase than during I_p flattop
- Not sure of how constant other parameters were held
 - Need to do additional dedicated experiments

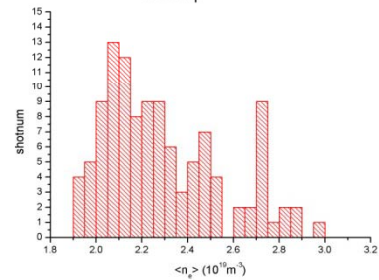
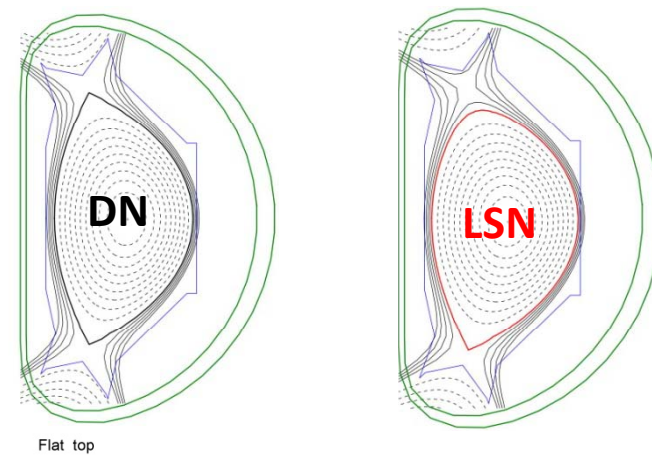
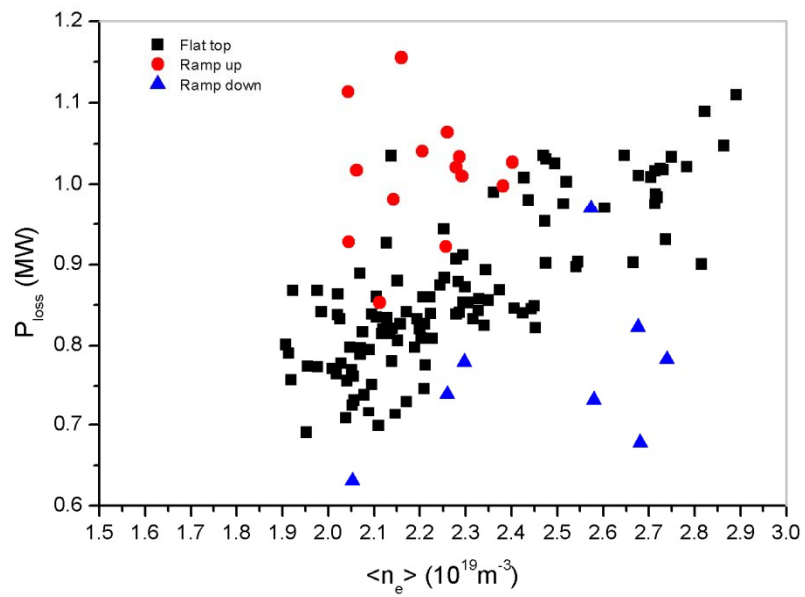
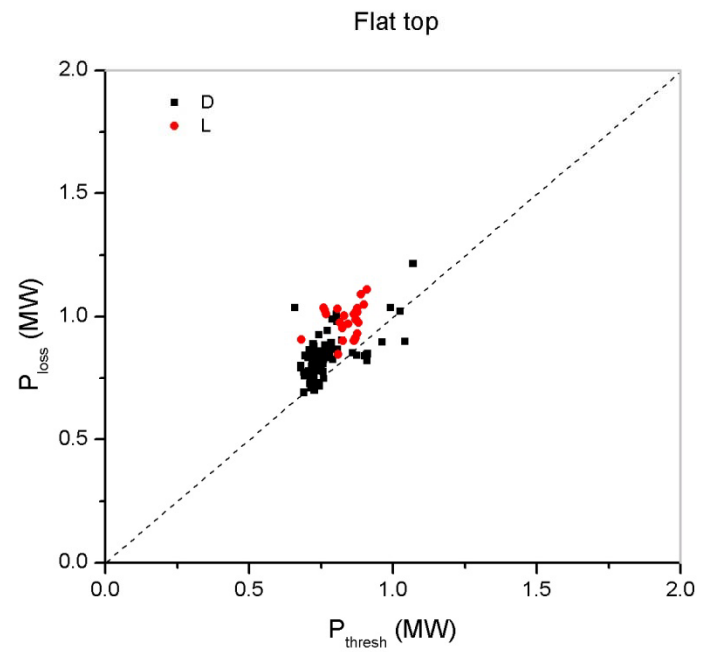
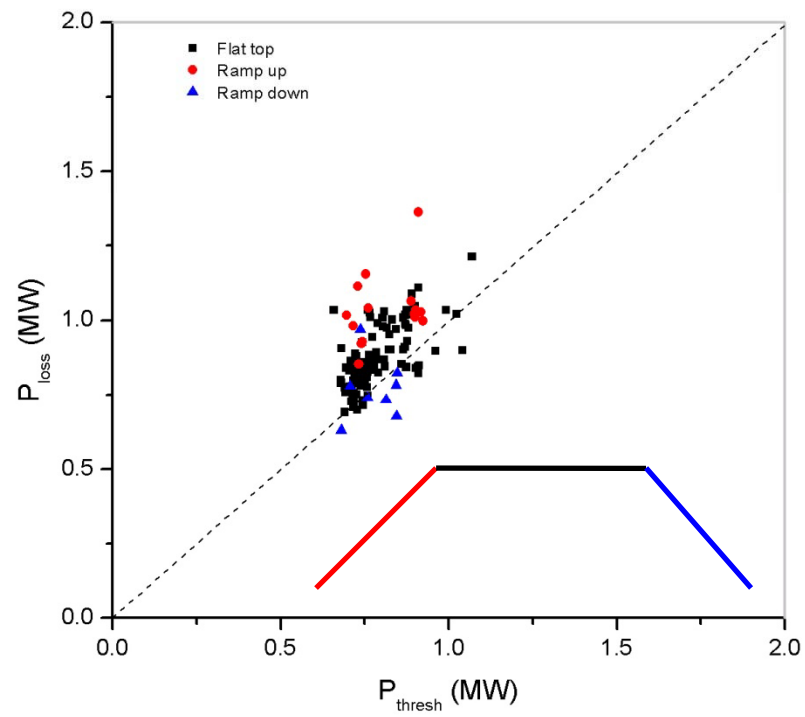
L-H transition in current ramping up and down phase (EAST)



L-H transition in current ramping up phase

L-H transition in current ramping down phase





Planned Experiment

- Choose baseline I_p (800 kA?)
 - Find P_{LH} under standard conditions during I_p ramp (early NBI)
 - Will need to vary NBI power to determine threshold power, P_{LH}
 - When found, change I_p waveform to flattop at that current
 - Delay NBI until after flattop starts
 - Increase (or decrease) beam voltage to determine flattop P_{LH}
- Choose higher I_p and repeat
- Vary I_p ramp rate
 - Determine P_{LH} at chosen current as a function of ramp rate
 - Scenarios to be developed by ASC?
- Approximately a 1 day XP