(TC) Session Report

May 28, 2024 (T.Kobayashi)

Date: May 24, 2024
Time: 14:45 – 16:45
Shot#: 191966 - 192006 (41 shots)
Prior wall conditioning: None
Divertor pump: Off
Gas puff: He, Ar
Pellet: TESPEL(Li_2TiO_3)

NBI#(1, 2, 3, 4, 5) = gas(H, H, H, H, He)=P(-, -, 2.0, 3.5, max 3.8) MW
ECH(77GHz) = ant(1.5-Uo, 5.5-U, 2-OUR)=P(-, 0.698, 0.38) MW
ECH(154GHz) = ant(2-OLL, 2-OUL, 2-OLR)=P(0.70, 0.806, 0.980) MW
ICH(3.5U, 3.5L, 4.5U, 4.5L) = P(0.575, -, 0.650, -) MW

Topics

1. Confinement study between dimensionally similar H and He plasmas in LHD (N. Tamura)

Confinement study between dimensionally similar H and He plasmas in LHD (N. Tamura et al.)

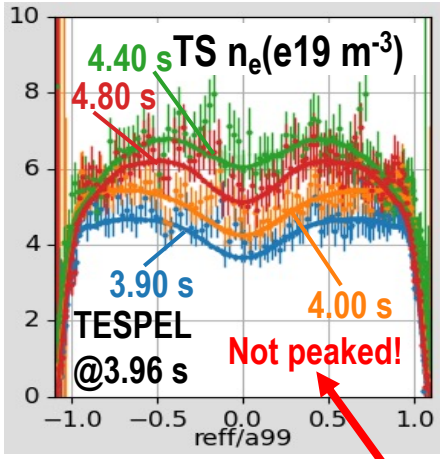
Experimental conditions: (R_{ax}, Polarity, B_t, γ, B_q) = (3.60 m, CW, 2.75 T, 1.2538, 100.0%):
Shots: #191966 - #192006
Goal of this experiment

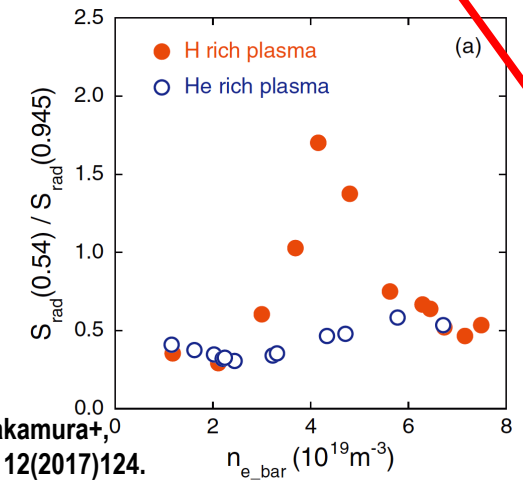
- Characterize pure He plasmas with different heating conditions and compare their confinement properties with those in pure H plasmas in LHD

Results

- We produced plasmas heated by ECH and by ECH+He-NBI with a He gas-puff
- Plasma profiles (n_e, n_{He}, n_H, T_i, E_r, etc.) and fluctuations obtained will be analyzed
  - ✓ Ar gas-puff was performed for the intrinsic impurity transport analysis
  - ✓ Li_2TiO_3-TESPELs were injected for the tracer impurity transport analysis
- In He-riched plasmas, no accumulation of the intrinsic impurity had been observed
  - ✓ No impurity accumulation was observed also w/ TESPEL

EC-heated





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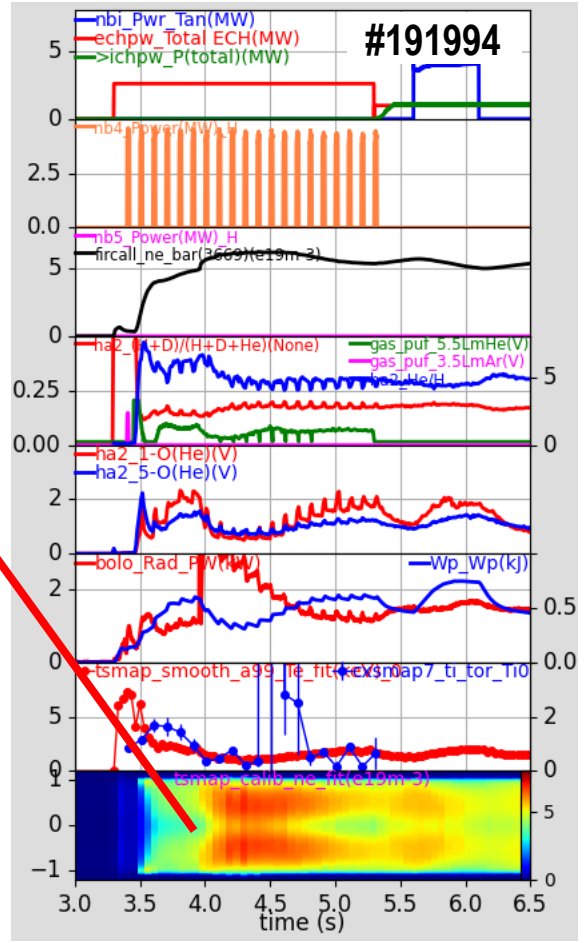

(EC + He-NBI)-heated