(TC) Report

May 24, 2024 (T. Tokuzawa)

Date: May 23, 2024
Time: 12:45 - 16:45
Shot#: 191817 – 191877 (61 shots)

Prior wall conditioning: He
Divertor pump: OFF
Gas puff: H2, He Pellet: NO, IPD: NO

NBI#(1, 2, 3, 4, 5)=gas(H, H, H, H, H)=P(-, -, -, 3.2, 2.6)MW

ECH(77GHz)=ant(5.5-Uout (or 1.5U), 2-OUR)=P(109, 112)kW
ECH(154GHz)=ant(2-OLL, 2-OUL , 2-OLR)=P(192, 204, 250)kW
ECH(56GHz)=ant(1.5U)=P(-)kW
ICH(3.5U, 3.5L, 4.5U, 4.5L)=P(0.6, -, 0.55, -)MW

Remarks: sequence: 3 min 30s (Wall DC)

Topics

1. Validation of coupled ICRF wave and fast ion transport simulation codes at various ion species concentrations (N. Tsujii (U. Tokyo), R. Seki) [#191817 - #191877]

Validation of coupled ICRF wave and fast ion transport simulation codes at various ion species concentrations

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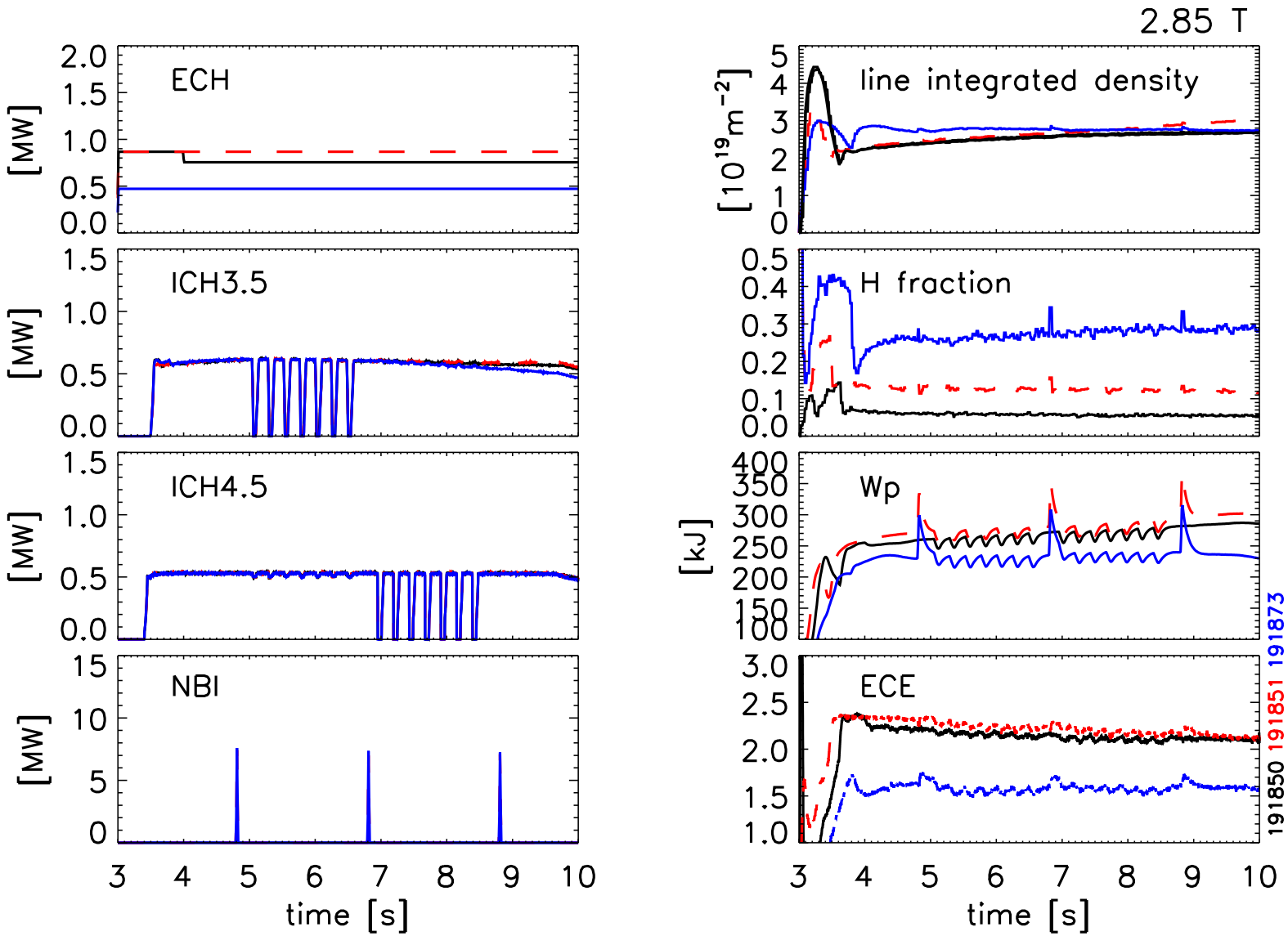
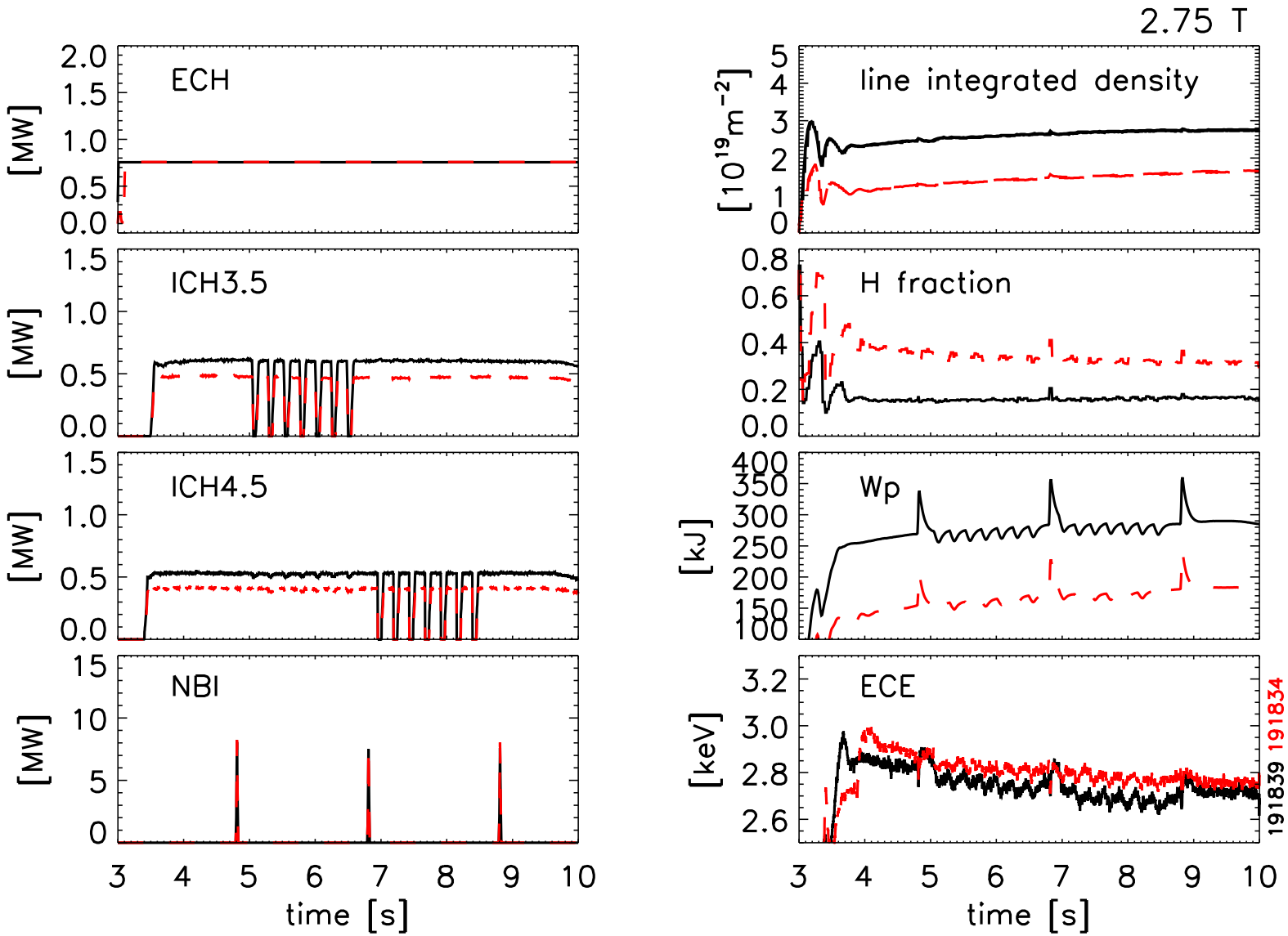
Validation of coupled ICRF wave and fast ion transport simulation codes at various ion species concentrations

- Shot: 191816-191877 (38 successful shots)
- Experimental conditions:
  - CCW, 3.6 m, 2.75 T, 1.2538, 100.0 (8 shots)
  - CCW, 3.6 m, 2.85 T, 1.2538, 100.0 (30 shots)
- Objective
  - Validation of 3-D ICRF wave and fast ion transport simulations
  - LHD ICRF has a unique He4(H) heating characteristics (good absorption for a wide range of H concentrations) $\rightarrow$ good platform to test code predictions
- Results
  - H/(H+2He) was scanned from 5–30 %
  - ECE, DNPA, CXS (H/He profile, distribution) and FIDA data obtained
  - Not much change in heating characteristics?

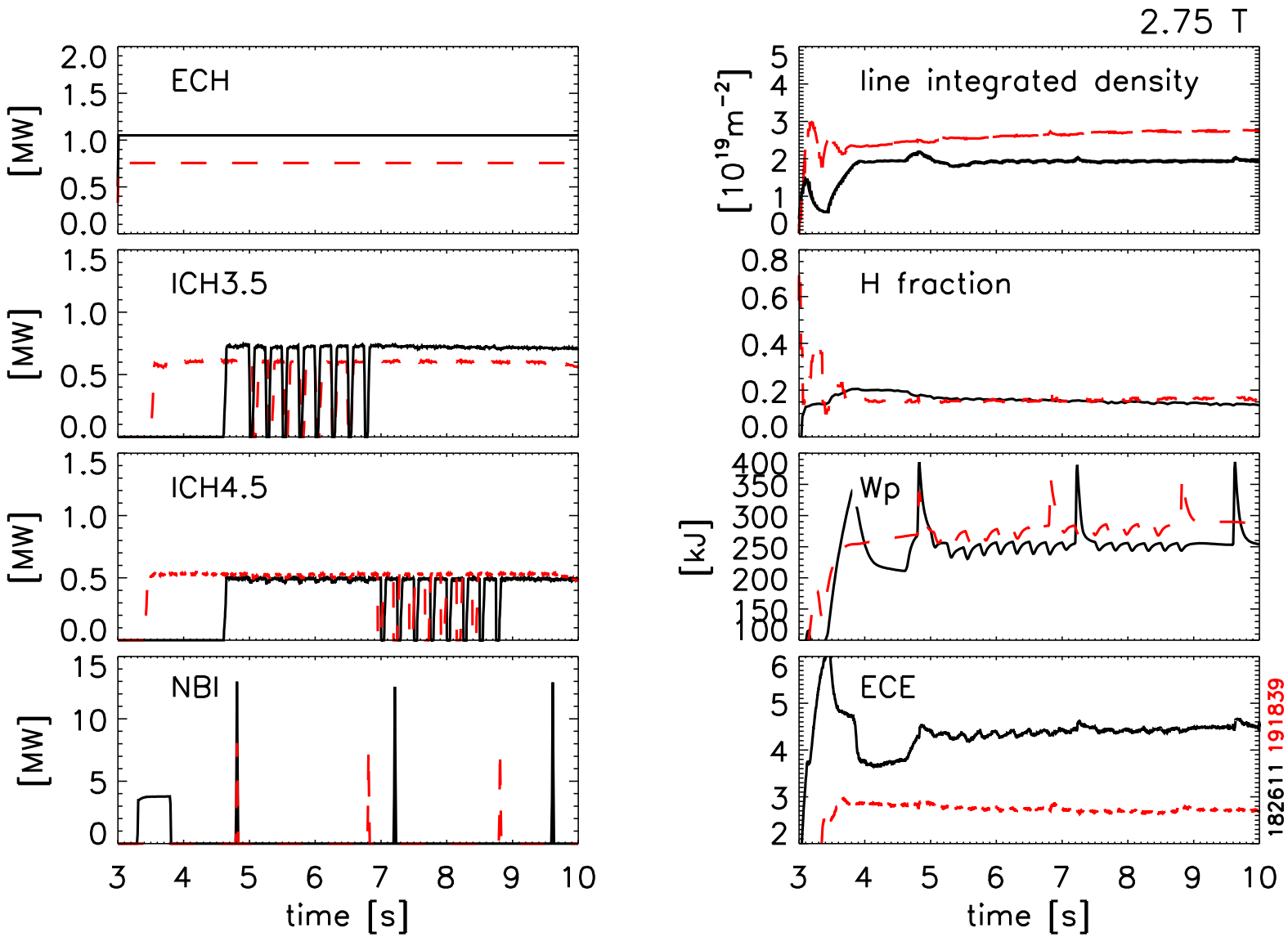
Concentration scan performed at 2.85 T, He



Concentration scan performed at 2.75 T, He



Electron temperature was lower compared to the deuterium discharges



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