

(IA) Session Report

Mar. 22, 2024 (T. Nasu)

Date: Mar. 21, 2024

Time: 14:45 – 16:45

Shot#: 187969 – 188012 (44 shots)

Prior wall conditioning: NONE

Divertor pump: ON

Gas puff: H₂

Pellet: None

NBI#(1, 2, 3, 4, 5)=gas(H, H, H, H, H)=P(3.8, 4.0, 4.2, 4.1, 4.5) MW

ECH(77GHz)=ant(5.5U-Out, 2O-UR)=P(0.698, 0.380) MW

ECH(154GHz)=ant(2-OLL, 2-OUL, 2-OLR)=P(0.705, 0.683, -) MW

ECH(56GHz)=ant(1.5U)=P(-)kW

ICH(3.5U, 3.5L, 4.5U, 4.5L)=P(-, -, -, -)MW

Topic

1. Investigation of cross-scale interaction between electron-scale and ion-scale turbulence (T. Nasu, T. Tokuzawa)

Investigation of cross-scale interaction between electron-scale and ion-scale turbulence

(T. Nasu, T. Tokuzawa)

Experimental conditions: $(R_{ax}, \text{Polarity}, B_t, \gamma, B_q) =$

$(3.55 \text{ m}, \text{CW}, 2.789 \text{ T}, 1.2538, 100.0\%)$ Shots: #187969 - #188012

Motivation & Methodology:

- To observe electron-scale and ion-scale turbulence simultaneously at the same observation position at $r_{eff}/a_{99} = 0.5 \sim 1.0$, along T_e/T_i varying $1 \sim 3$.
- for DBS to reach core region, we made center peaking n_e profile by perp. NBI and the magnetic configuration.
- not to change observation position temporally, constant n_e profiles are needed.

Results:

- We attained greatly increasing T_e with constant T_i and n_e profiles.
- T_e/T_i successfully range from 1 to 3.
- BS, for electron-scale, and DBS, for ion-scale, data was attained simultaneously at $r_{eff}/a_{99} = 0.5 \sim 0.9$.

e.g., #187977

$(R_{ax} = 3.55 \text{ m}, B_{ax} = 2.789 \text{ T})$

