

(TG2) Turbulence Topical Group Report



Oct. 27, 2021 (T. Tokuzawa)

Date: Oct. 26, 2021

Time: 9:54- 12:25

Shot#: 170948 – 170982 (35 shots)

Prior wall conditioning: NO

Divertor pump: OFF

Gas puff: None

Pellet: None

NBI#(1, 2, 3, 4, 5)=gas(H, H, H, D, D)=P(4.1, 4.1, 3.9, 6.0, 5.9)MW

ECH(77GHz)=ant(5.5-Uout (or 1.5U), 2-OUR)=P(703, 792)kW

ECH(154GHz)=ant(2-OLL, 2-OUL, 2-OLR)=P(723, 715, 727)kW

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

ICH(3.5U, 3.5L, 4.5U, 4.5L)=P(0.75, 0.7, 0.75, 0.45)MW

Neutron yield integrated over the experiment = 4.9×10^{15}

Topics

1. Plasma behaviors at the boundary of the transition to the high ion temperature discharge will be investigated (M. Yoshinuma)

Plasma behaviors at the boundary of the transition to the High Ion Temperature discharge

Experimental conditions:

(R_{ax} , Polarity, B_t , γ , B_q) = (3.55m, CW, 2.78 T, 1.2538, 100.0%)

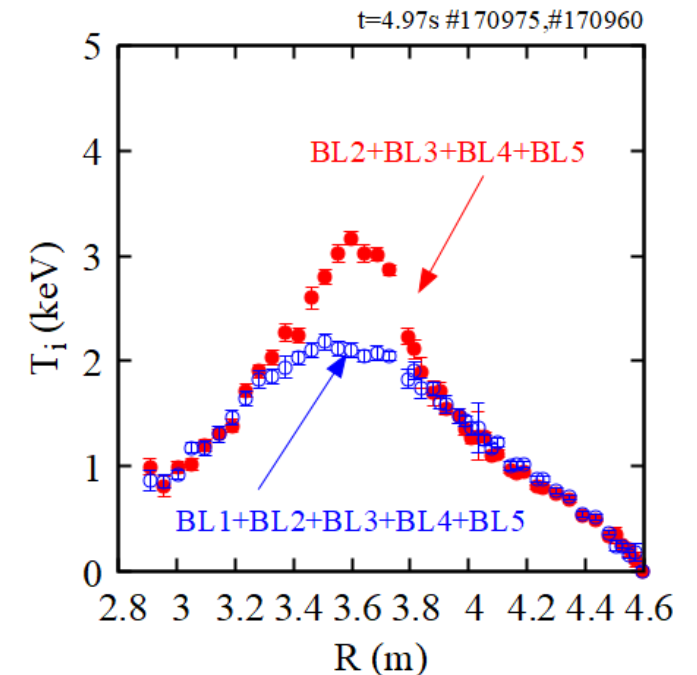
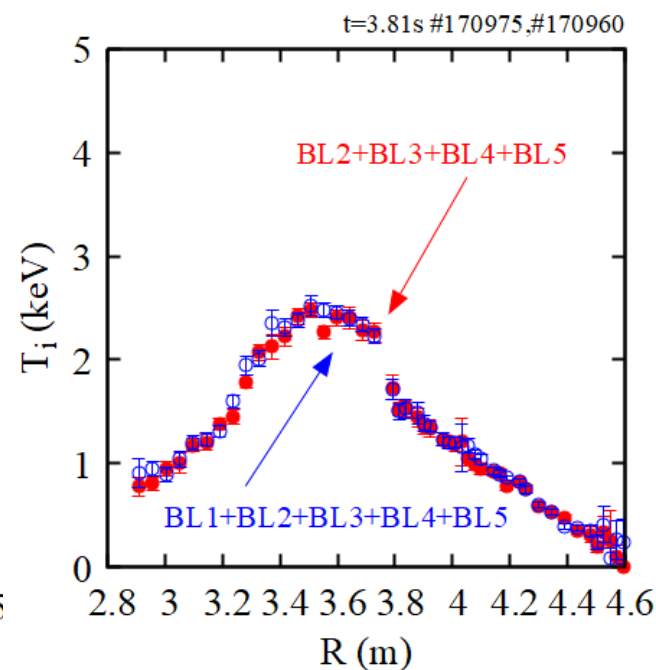
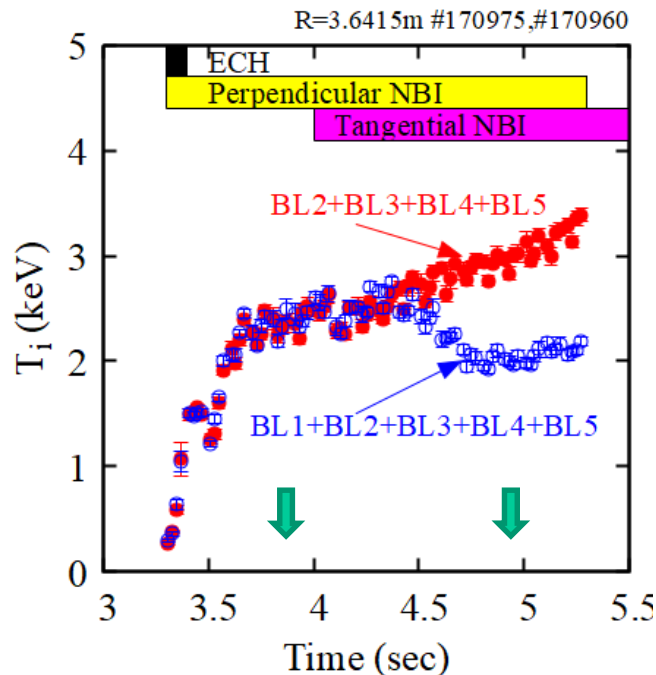
Motivation and Objective:

Understanding the ion temperature discharge by studying the plasma behaviors at the boundary of the transition to the high Ion temperature discharge.

Experiments:

The behavior of the ion temperature was observed by varying the combination of tangential NBI as additional heating with a vertical beam leading discharge in CW configuration.

Ion temperatures in the case with full beam injection and less injection.



Results and future plan:

Discharges with low and high ion temperatures were obtained depending on the combination of tangential beams.

Less injection case achieved higher ion temperature.

Relation on the T_e/T_i and difference in the fluctuations will be investigated.

The results will be compared with the observations in the CCW experiment on next week.