(MAP) Session Report

May 24, 2024 (R. Yanai)

Date: May 23, 2024
Time: 10:25 – 12:43
Shot#: 191770 – 191816 (47 shots)
Prior wall conditioning: He GDC
Divertor pump: Off
Gas puff: He, Ar
Pellet: No
LID: No

NBI#(1, 2, 3, 4, 5) = gas(H, H, H, H, H)=P(3.2, 2.9, 3.3, 3.6, 4.0) 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(0.705, 0.310, 0.982) MW
ICH(3.5U, 3.5L, 4.5U, 4.5L) = P(-, -, -, -) MW

Topics

1. Impact of impurity powder dropping on He plasma (S. Masuzaki)
2. Comparison of turbulent transport between LHD and W7-X (Piggy-backed) (H. Sakai(Kyushu Univ.), K. Tanaka)（This topic will be reported next week including today's result.）

Impact of impurity powder dropping on He plasma

S. Masuzaki

Shot #: 191769 – 191813

(R_{ax}, B_t, γ, B_q) = (3.6 m, -2.75 T, 1.2538, 100.0%)

Working gas: He

P_{ECH}~2 MW, P_{NBI-1}~P_{NBI-2}~P_{NBI-3}~3 MW, P_{NBI-4}~5MW, P_{NBI-5}~6MW

Objectives

- It has been observed that the boron powder dropping improves the wall conditioning and plasma confinement by affecting turbulence in H and D plasmas.
- The mechanisms of the powder dropping on turbulences are still not clear at present. In this experiment, the powder dropping was conducted in He plasma to see whether the effects are different between in H/D plasma and He plasma.

Results

- The powder dropping was conducted to He dominant plasmas with He/(He+H+D)>80%.
- The similar effects of the powder dropping on Te, oxygen, iron as in H/D plasmas were observed in the He dominant plasmas.
- The data obtained will be analyzed in more detail in the future.