(TG1) Multi-ion group report

Nov. 11, 2021 (G. Motojima)

Date: Nov. 10, 2021
Time: 13:48 - 15:14
Shot#: 172229 – 172256(28 shots)

Prior wall conditioning: No
Divertor pump: On
Gas puff: None
Pellet: H pellet

NBI#(1, 2, 3, 4, 5)=gas(H, D, D, D, D)=P(4.4, 2.5, 2.1, 5.9, 5.2)MW

ECH(77GHz)=ant(5.5-U, 2-OUR)=P(703, 792)kW
ECH(154GHz)=ant(2-OLL, 2-OUL, 2O-LR)=P(979, 930, 986)kW
ICH(38.47MHz)=ant(3.5U, 3.5L, 4.5U, 4.5L)=P(-, -, -, -)kW
Neutron yield integrated over the experiment = 2.8×10^{16}

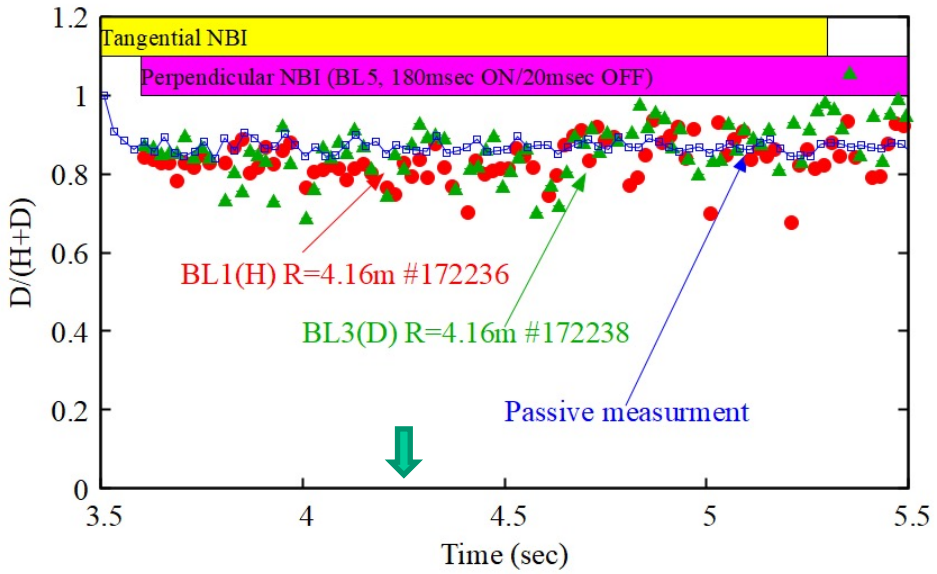
Topics

1. Observation of Hydrogen Beam Fueling by using H tangential beam injection (M. Yoshinuma)

Observation of Hydrogen Beam Fueling by using H tangential beam injection

Experimental conditions:
(*R*ax, Polarity, *B*t, *γ*, *B*q) = (3.6m, CW, 2.75 T, 1.2538, 100.0%)

The amount of beam fueling with tangential beam might be very small. By aligning the beam injection direction, we try to observe the hydrogen beam fueling by minimizing the effect of flow on the evaluation of the D/H ratio.



Experiments:

(1)The profile of D/(H+D) ratio is observed in the plasma with counter beam injection (BL1 and BL3). BL1 is hydrogen beam and BL3 is deuterium beam.
(2) The profile of D/(H+D) ratio is also observed in the plasma with almost balanced beam injection (BL1+BL2 and BL2+BL3).
(3) Hydrogen pellet is injected into deuterium plasma with the co- and counter- beam injection.

Results:

There has been no clear difference yet in the time trace of D/(H+D) with H beam and D beam injections. Statistic analysis should be done to see small difference.
Hydrogen beam fueling was not observed in the discharges.
The profile of D/(H+D) is almost flat in both cases.