

# (SG2, TC) Session Report

May 21, 2024 (M.Yoshinuma)

**Date:** May 17, 2024

**Time:** 15:40 -16:45

**Shot#:** 191489 -191510 (22 shots)

**Prior wall conditioning:** No

**Divertor pump:** No

**Gas puff:** H<sub>2</sub>

**Pellet:** No

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

**ECH(77GHz) = ant(1.5-Uo, 5.5-U, 2-OUR)=P(0.337, 0.380, 0.389) MW**

**ECH(154GHz) = ant(2-OLL, 2-OUL, 2-OLR)=P(0.580, 0.606, -) MW**

**ICH(3.5U, 3.5L, 4.5U, 4.5L) = P(0.5, -, 0.4, 0.45) MW**

## Topics

1. Experimental study of the electron temperature anisotropy by using the LHD Thomson scattering system ( I. Yamada)

# Experimental study of the non-Maxwellian distribution of electrons and electron temperature anisotropy by using the LHD Thomson scattering system

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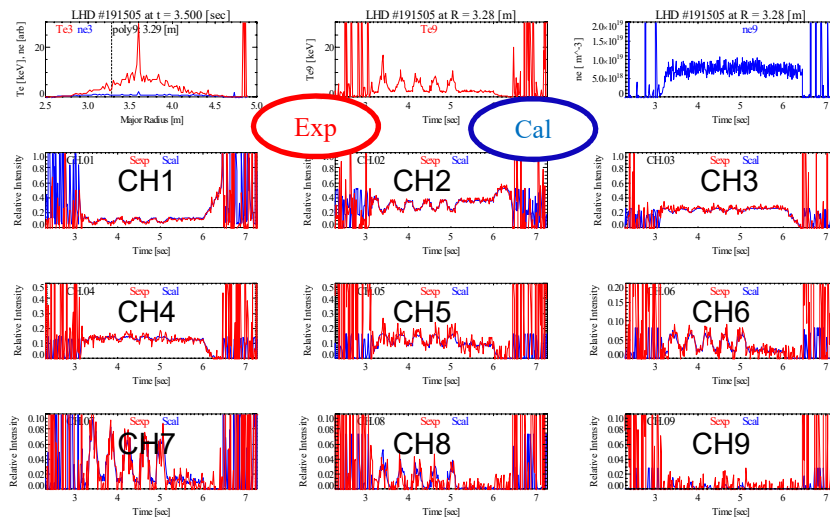
- Date: May 17, 2024 / Shot number: #191489 - #191510 (22 shots)
- $(R_{ax}, \text{Polarity}, B_t, \gamma, B_q) = (3.60 \text{ m, CCW}, 2.75 \text{ T}, 1.254, 100.0\%)$
- ECH modulation:  $f = 2.5 \text{ Hz}$  / Focal Point = 0.0, 0.3, and 0.6.

- We tried  $T_e$  anisotropy experiment by using the usual backscattering ( $T_e^{\text{perp}}$ ) and forward scattering ( $T_e^{\text{para}}$ ) measurements.
- However, no good forward scattering signal could be observed, due to a misalignment of the laser beam for forward scattering measurement (?). We have to check the laser beam alignment ASAP.
- We fixed a minor trouble of the new 12-CH polychromator, and both 9-CH and 12-CH polychromatos worked well on May 17.

## 9-CH Polychromator @ 3.30 m

### #191505 (ECH FP=0.3)

- No clear evidence of non-Maxwellian distribution was observed.
- In the experiment on May 17, statistical errors are a little bit larger than those in the May 7 experiment, because the  $n_e$  is lower.
- I will try to perform a new data analysis to improve the data accuracy. (by raw data accumulation method...)



## 12-CH Polychromator @ 3.64 m

### #191501 (ECH FP = 0.0)

- I fixed a minor problem of the 12 CH polychromator, and new calibration data of it was obtained.
- We expect that statistical uncertainty can be reduced by raw data accumulation methods for fixed plasma shots.

