Date: Feb. 3, 2022
Time: 9:40 - 13:20
Shot#: 178076 – 178149 (74 shots)
Prior wall conditioning: None
Divertor pump: On
Gas puff: H2, Pellet: No
NBI#(1, 2, 3, 4, 5)=gas(H, H, H, H, H)=P(4.2, 0.0, 4.0, 4.1, 4.4)MW
ECH(77GHz)=ant(5.5-U, 2-OUR)=P(0.70, 0.79)MW
Neutron yield integrated over experiment = \( (2.3 \times 10^{11}) \)

Topics
1. Mode structure of slowing down magnetic island (Y. Takemura)
**Mode structure of slowing down magnetic island (Y. Takemura)**

**Shot #:** 178076 – 178149

**Experimental conditions:**

\((R_{ax}, \text{Polarity}, B_t, \gamma, B_q) = (3.6 \text{ m}, \text{CCW}, 1.30 \text{ T}, 1.1739, 100 \%)\)

**Background and motivation:**

- In the low magnetic shear regime, the flattening structure at the X-point of the rotating island in \(T_e\) profile has been found by using the fast TS system.

- A candidate mechanism for the formation of the flattening structure is the residual error field after the cancelation of the error field by RMP coils, and the flattening structure might lead to the \(j \times B_{EF}\) braking force and enhance the slowing down of the island.

**Results:**

- \(T_e\) fluctuation profile was measured when the various external RMP is imposed to change the residual error field (see Table).

- In addition, \(T_e\) fluctuation profile at mode locking was obtained by using the event trigger system developed for the fast TS system in order to investigate the process of the mode locking.

**Table:**

<table>
<thead>
<tr>
<th>(I_{RMP}) (A)</th>
<th>120</th>
<th>140</th>
<th>160</th>
<th>180</th>
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<tbody>
<tr>
<td>7O</td>
<td>178144</td>
<td>178112</td>
<td>178142</td>
<td>178146</td>
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<tr>
<td>6O</td>
<td>178134</td>
<td>178125</td>
<td>178136</td>
<td></td>
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