# 24th 1st week(09/26/22 - 09/30/22) schedule for LHD experiment

Weekly report : H.Takahashi

<table>
<tr><th rowspan="2">Date</th><th rowspan="2">Day of the week</th><th rowspan="2">Bt direction</th><th colspan="2">Schedule of the day</th><th rowspan="2">Wall</th><th rowspan="2">Gas</th><th rowspan="2">Experiment implementation system</th><th rowspan="2">Remark</th></tr>
<tr><th>Morning (～ 12:15)</th><th>Afternoon (12:15 ～ 18:45)</th></tr>
<tr><td>9/26</td><td>Mo.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>9/27</td><td>Tu.</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>9/28</td><td>We.</td><td></td><td></td><td></td><td>None</td><td></td><td></td><td></td><td></td></tr>
<tr><td>9/29</td><td>Th.</td><td>CW</td><td>[multi-ion](11:45 ～ 18:45)ECH, NBI, ICH<br>Device commissioning, Plasma commissioning, Neutral gas pressure measurement<br>
<table>
<tr><th>#</th><th>Opt.</th><th>Pol.</th><th>Rax</th><th>Bax</th><th>gamma</th><th>Bq</th><th>SC</th></tr>
<tr><td>1</td><td></td><td>CW</td><td>3.6</td><td>2.75</td><td>1.2538</td><td>100.0</td><td></td></tr>
<tr><td>2</td><td>✓</td><td>CW</td><td>3.9</td><td>2.5385</td><td>1.2538</td><td>100.0</td><td></td></tr>
<tr><td>3</td><td>✓</td><td>CW</td><td>3.75</td><td>2.64</td><td>1.2538</td><td>100.0</td><td></td></tr>
<tr><td>4</td><td>✓</td><td>CW</td><td>3.6</td><td>1.375</td><td>1.2538</td><td>100.0</td><td></td></tr>
<tr><td>5</td><td>✓</td><td>CW</td><td>3.6</td><td>1.0</td><td>1.2538</td><td>100.0</td><td></td></tr>
</table></td><td></td><td>None</td><td>H2, He, N2, Ne, Ar, Kr, Xe</td><td>【Responsible person】M.Isobe / Y.Takemura<br>【ECH】H.Igami/N.Kenmochi<br>【NBI】H.Nakano<br>【central ctrl./data proc.】Ohsuna, Maeno / Ohsuna, Yasui<br>【radiation】T.Saze<br>【EXP LAN】Nakamura/Yamamoto<br>【TGL】N.Tamura/M.Kobayashi<br>【SubTGL】H.Kasahara/G.Motojima</td><td>(id:676) Impurity pellet/TESPEL<br>(id:677) Impurity gas puff<br>(id:678) Impurity powder dropper<br>(id:679) High Pressure Pulse Operation<br>(id:684) ICh: Operation at the standby position<br>(id:685) Mag. Conf.: Using LID coil<br>(id:686) Probe: Insertion of Fast Ion Loss Diagnostics (8-O)<br>(id:688) Probe: HDLP Probe access near LCFS<br>(id:693) ECH: Commissioning (alignment, profile check)<br>(id:696) ICH: IC wave injection into the vaccum (w/o plasma)<br>(id:702) ECH: Collective Thomson Scattering (CTS) measurement</td></tr>
<tr><td>9/30</td><td>Fr.</td><td>CCW</td><td>[multi-ion](11:45 ～ 15:30)ECH, NBI, ICH<br>Device commissioning, Plasma commissioning, Alpha particle detector test<br>
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[instability](15:30 ～ 18:45)ECH, NBI<br>IPD experiment<br>
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</table></td><td></td><td>None</td><td>H2, He, N2, Ne, Ar, Kr, Xe</td><td>【Responsible person】M.Osakabe / T.Tokuzawa<br>【ECH】H. Takahashi / Y. Yoshimura<br>【NBI】K.Tsumori / K.Nagaoka<br>【central ctrl./data proc.】Ohsuna, Maeno / Ohsuna, Yasui<br>【radiation】T.Kobuchi<br>【EXP LAN】Inoue/Nakamura<br>【TGL】N.Tamura/M.Kobayashi, K.Nagaoka/Y.Takemura<br>【SubTGL】H.Kasahara/G.Motojima, R.Seki/N.Kenmochi</td><td>(multi-ion)56 GHZ gyrotron will be used at Bt = 1.0T.<br>(instability)RMP<br>(id:676) Impurity pellet/TESPEL<br>(id:677) Impurity gas puff<br>(id:678) Impurity powder dropper<br>(id:684) ICh: Operation at the standby position<br>(id:685) Mag. Conf.: Using LID coil<br>(id:686) Probe: Insertion of Fast Ion Loss Diagnostics (8-O)<br>(id:688) Probe: HDLP Probe access near LCFS<br>(id:693) ECH: Commissioning (alignment, profile check)<br>(id:696) ICH: IC wave injection into the vaccum (w/o plasma)<br>(id:702) ECH: Collective Thomson</td></tr>
</table>

LHD project

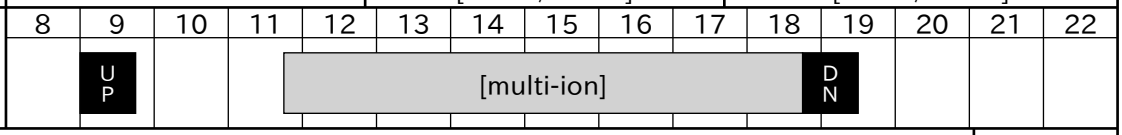
# Daily Schedule

| Prepared by |
|---|
| N.Tamura |

| Date | Experimental Subject |
|---|---|
| 2022/9/29(Thu) | Device commissioning, Plasma commissioning, Neutral gas pressure measurement |

| Exp. No. | Topical Group | TGL | Sub-TGL |
|---|---|---|---|
| 1277 | multi-ion | N.Tamura/M.Kobayashi [2337/2169] | H.Kasahara/G.Motojima [2203/2142] |

Time Table




## Details and Experimental Conditions

[multi-ion Coordinator: N.Tamura](11:45 ～ 18:45) ECH, NBI, ICH
* Coil excitation for the experiments is scheduled after the fire drill (around from 9:30).

11:45 - 18:45 Device commissioning (N. Tamura)
11:45 - 18:45 Plasma commissioning (N. Tamura)
11:45 - 18:45 Neutral pressure measurements with robust pressure gauges of the ITER type (U. Wenzel, G. Motojima)

Maximum number of discharges : 180
Sequence:3min

| # | Option | Polarity | Rax(m) | Bax(T) | gamma | Bq(%) | Subcooled |
|---|---|---|---|---|---|---|---|
| 1 | | CW | 3.6 | 2.75 | 1.2538 | 100.0 | |
| 2 | ✓ | CW | 3.9 | 2.5385 | 1.2538 | 100.0 | |
| 3 | ✓ | CW | 3.75 | 2.64 | 1.2538 | 100.0 | |
| 4 | ✓ | CW | 3.6 | 1.375 | 1.2538 | 100.0 | |
| 5 | ✓ | CW | 3.6 | 1.0 | 1.2538 | 100.0 | |

## Gas

H2,He,N2,Ne,Ar,Kr,Xe

## Wall Conditioning

GD(Before Exp.): None , GD(After Exp.): None , Cryopump(During Exp.): off

## Remarks

Coil excitation from 9:00 a.m. is for the fire drill. Therefore, coil excitation for the experiment is scheduled to be conducted after the fire drill.
After the experiment is over (after 6:45 p.m.), device calibration tests are scheduled to be conducted while maintaining the magnetic field.

【Precautions for today's LHD experiments】
(id:676) Impurity pellet/TESPEL
(id:677) Impurity gas puff
(id:678) Impurity powder dropper
(id:679) High Pressure Pulse Operation
(id:685) Mag. Conf.: Using LID coil
(id:686) Probe: Insertion of Fast Ion Loss Diagnostics (8-O)
(id:688) Probe: HDLP Probe access near LCFS
(id:693) ECH: Commissioning (alignment, profile check)
(id:696) ICH: IC wave injection into the vaccum (w/o plasma)
(id:702) ECH: Collective Thomson Scattering (CTS) measurement
(id:703) ECH: EC wave Injection from the Port 1.5Uo antenna
(id:706) ICH: Antennae insertion for plasma heating by ICH
(id:718) ECH: Optical Vortex injection : Subcool required
(id:720) Probe: Edge plasma measurement using the fast-scanning Langmuir probes

LHD project

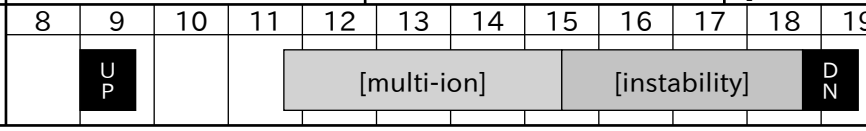
# Daily Schedule

| Prepared by |
|---|
| S.Masuzaki<br>M.Nishiura |

| Date | Experimental Subject |
|---|---|
| 2022/9/30(Fri) | Device commissioning, Plasma commissioning, Alpha particle detector test<br>IPD experiment |

| Exp. No. | Topical Group | TGL | Sub-TGL |
|---|---|---|---|
| 1278 | multi-ion/instability | N.Tamura/M.Kobayashi<br>K.Nagaoka/Y.Takemura<br>[2337/2169, 2177/2167] | H.Kasahara/G.Motojima<br>R.Seki/N.Kenmochi<br>[2203/2142, 2201/2208] |

Time Table




## Details and Experimental Conditions

[multi-ion Coordinator: N.Tamura](11:45 ～ 15:30) ECH, NBI, ICH
* Coil excitation for the experiments is scheduled after the fire drill (around from 9:30).

11:45 - 15:30 Device commissioning (N. Tamura)
11:45 - 15:30 Plasma commissioning (N. Tamura)
11:45 - 15:30 Trial: Measurements of p-11B alpha particles (TAE group, S. Ohdachi, K. Ogawa)

Maximum number of discharges : 180
Sequence:3min

| # | Option | Polarity | Rax(m) | Bax(T) | gamma | Bq(%) | Subcooled |
|---|---|---|---|---|---|---|---|
| 1 | | CCW | 3.6 | 2.75 | 1.2538 | 100.0 | |
| 2 | | CCW | 3.6 | 1.375 | 1.2538 | 100.0 | |
| 3 | | CCW | 3.6 | 1.0 | 1.2538 | 100.0 | |

[instability Coordinator: M.Shoji](15:30 ～ 18:45) ECH, NBI
The radiation enhancement and triggering the island divertor detachment by direct supply of BN powders into the magnetic island in the LHD peripheral plasma using the IPD (M. Shoji)

Maximum number of discharges : 100
Sequence:3min

| # | Option | Polarity | Rax(m) | Bax(T) | gamma | Bq(%) | Subcooled |
|---|---|---|---|---|---|---|---|
| 1 | | CCW | 3.85 | 1.375 | 1.2538 | 100.0 | |

## Gas

H2,He,N2,Ne,Ar,Kr,Xe

H2,Ar

## Wall Conditioning

GD(Before Exp.): None , Cryopump(During Exp.): off

## Remarks

Coil excitation from 9:00 a.m. is for the fire drill. Therefore, coil excitation for the experiment is scheduled to be conducted after the fire drill.

(multi-ion)56 GHZ gyrotron will be used at Bt = 1.0T.
(instability)RMP

【Precautions for today's LHD experiments】
(id:676) Impurity pellet/TESPEL
(id:677) Impurity gas puff
(id:678) Impurity powder dropper
(id:685) Mag. Conf.: Using LID coil
(id:686) Probe: Insertion of Fast Ion Loss Diagnostics (8-O)
(id:688) Probe: HDLP Probe access near LCFS
(id:693) ECH: Commissioning (alignment, profile check)
(id:696) ICH: IC wave injection into the vaccum (w/o plasma)
(id:702) ECH: Collective Thomson Scattering (CTS) measurement
(id:703) ECH: EC wave Injection from the Port 1.5Uo antenna
(id:706) ICH: Antennae insertion for plasma heating by ICH
(id:710) ECH: Focusing point scan : Subcool required
(id:712) NBI: Injection into the discharges with low fields
(id:717) Insertion of sample, etc: Insertion of the alpha particle detector
(id:718) ECH: Optical Vortex injection : Subcool required
(id:722) Insertion of sample, etc: Insertion of water-cooled tungsten divertor test piece