

24th 2nd week(10/03/22 - 10/07/22) schedule for LHD experiment

Weekly report : H.Takahashi

Date	Day of the week	Bt direction	Schedule of the day												Wall	Gas	Experiment implementation system	Remark
			Morning (~ 12:15)						Afternoon (12:15 ~ 18:45)									
10/3	M.O.														Sat: H2 GD			
10/4	Tu.C.W	[multi-ion](09:45 ~ 12:15)ECH, NBI, ICH ECH commissioning	# Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0	[turbulence](12:15 ~ 18:45)ECH, NBI, ICH Turbulence transition, Turbulence control, ETG turbulence threshold, Shear flows induced by EIC	# Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0 2 CW 3.55 2.7887 1.2538 100.0 3 CW 3.6 1.375 1.2538 100.0										None	H2, He, Ne, Ar, Kr	[Responsible person]K.Ida / M.Kobayashi [ECH]H.Takahashi/H.Igami [NBI]K.Ikeda [central ctrl./data proc.]Ohsuna, Ogawa / Ohsuna, Yasui [radiation]T.Kobuchi [EXP LAN]Inoue/Yamamoto [TGL]N.Tamura/M.Kobayashi, T.Tokuzawa [SubTGL]H.Kasahara/G.Motojima, A.Shimizu/T.Kobayashi/M.Nishiura /M.Nakata	turbulence)NBI modulation, ECH modulation Off-axis ECH, Impurity gas puff, LID, PCI, CXS, Thomson, FIR, Zeff, HIBP (id:677) Impurity gas puff (id:681) Mag. Conf: 3.55 m <= Rax < 3.6 m (id:685) Mag. Conf: Using LID coil (id:693) ECH: Commissioning alignment, profile check) (id:696) ICH: IC wave injection into the vacuum (w/o plasma) (id:705) ECH: off-axis injection Combined) (id:706) ICH: Antennae insertion for plasma heating by ICH : Subcool required (id:722) Insertion of sample, etc:
10/5	We.C.W	[multi-ion](09:45 ~ 13:45)ECH, NBI, ICH ECH commissioning, Study for the real-time boronization using the impurity powder dropper	# Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0	[spectroscopy](13:45 ~ 16:45)ECH, NBI impurity transport using TESPEL injections	# Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0	[multi-ion](16:45 ~ 18:45)ECH, NBI, ICH Poloidal and toroidal asymmetries of plasma radiation during impurity seeding	# Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.75 2.64 1.2538 100.0								None	H2, He, N2, Ne, Ar	[Responsible person]R.Sakamoto / Y.Takemura [ECH]R.Yanai [NBI]Y.Kawamoto [central ctrl./data proc.]Ohsuna, Ogawa / Ohsuna, Yasui [radiation]M.Tanaka [EXP LAN]Nakamura/Watanabe [TGL]N.Tamura/M.Kobayashi, M.Goto [SubTGL]H.Kasahara/G.Motojima, M.Yoshinuma/T.Oishi/T.Kawate	multi-ion)Manipulator(4.5L, 10.5L), IPD(B), BES, CXS spectroscopy)TESPEL injection, open NB#3 gate RMP(60) (id:676) Impurity pellet/ TESPEL (id:677) Impurity gas puff (id:678) Impurity powder dropper (id:685) Mag. Conf: Using LID coil (id:693) ECH: Commissioning alignment, profile check) (id:696) ICH: IC wave injection into the vacuum (w/o plasma) (id:705) ECH: Antennae insertion for plasma heating by ICH : Subcool required (id:722) Insertion of sample, etc:
10/6	Th.C.W	[multi-ion](09:45 ~ 12:15)ECH, NBI, ICH ICH commissioning	# Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0	[spectroscopy](12:15 ~ 18:45)ECH, NBI Edge impurity transport	# Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0 2 CW 3.75 2.64 1.2538 100.0 3 CW 3.9 2.5385 1.2538 100.0 4 ✓ CW 3.7 2.6757 1.2538 100.0 5 ✓ CW 3.8 2.6053 1.2538 100.0										None	H2, He, Ar, Ne	[Responsible person]S.Masuzaki / N.Tamura [ECH]N.Kenmochi [NBI]K.Ikeda [central ctrl./data proc.]Ohsuna, Ogawa / Ohsuna, Maeno [radiation]M.Kobayashi [EXP LAN]Inoue/Nakamura [TGL]N.Tamura/M.Kobayashi, M.Goto [SubTGL]H.Kasahara/G.Motojima, M.Yoshinuma/T.Oishi/T.Kawate	(spectroscopy)NBI#3 gate open for CXS measurement (id:677) Impurity gas puff (id:696) ICH: IC wave injection into the vacuum (w/o plasma) (id:698) ECH: EC wave injection for more than 10 s (Combined) (id:706) ICH: Antennae insertion for plasma heating by ICH : Subcool required (id:722) Insertion of sample, etc: Insertion of water-cooled tungsten divertor test piece
10/7	Fr.C.W	[instability](09:30 ~ 12:45)ECH, NBI Beta effect on edge transport, Optical vortex ECH	# Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.9 1.0 1.2538 100.0 2 ✓ CW 3.6 2.75 1.2538 100.0 3 ✓ CW 3.75 1.0 1.2538 100.0	[instability](12:45 ~ 17:15)ECH, NBI, ICH The investigation of the impurity shielding performance of the ergodic layer by a systematic scan of the dust dropping rate using the impurity Powder Dropper, Commissioning of ICH in D(H)	# Opt. Pol. Rax Bax gamma Bq S 1 CW 3.75 2.64 1.2538 100.0 2 CW 3.6 2.75 1.2538 100.0 3 CW 3.6 2.735 1.2538 100.0 4 CW 3.6 2.6 1.2538 100.0 5 ✓ CW 3.9 2.5385 1.2538 100.0 6 ✓ CW 3.6 2.65 1.2538 100.0 7 ✓ CW 3.6 2.63 1.2538 100.0 8 ✓ CW 3.6 2.58 1.2538 100.0	[instability](17:15 ~ 18:45)ECH, NBI EBW	# Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.56 1.0 1.2538 100.0								None	H2, D2, Ar	[Responsible person]K.Tanaka / K.Nagaoka [ECH]Y.Yoshimura [NBI]K.Nagaoka [central ctrl./data proc.]Ohsuna, Ogawa / Ohsuna, Maeno [radiation]T.Saze [EXP LAN]Inoue/Watanabe [TGL]K.Nagaoka/Y.Takemura, N.Tamura/M.Kobayashi [SubTGL]R.Seki/N.Kenmochi, H.Kasahara/G.Motojima	(instability)Fast TS, Divertor Langmuir probe with fast mode multi-ion)Various dust (B, C, Li) drop, measurement of the high-speed stereo camera (newly installed at 2.5-U), measurement of boron density distribution by CXS, measurement of various impurities in the plasma chamber, ion temperature distribution by CXS, Fast ion measurement by FIDA, High sensitivity H, D ratio measurement (id:677) Impurity gas puff (id:678) Impurity powder dropper (id:696) ICH: IC wave injection into the vacuum (w/o plasma) (id:706) ICH: Antennae insertion for plasma heating by ICH : Subcool

LHD project

Daily Schedule

Prepared by

N.Tamura

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N.Tamura

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N.Tamura

Date	Experimental Subject																		
Exp. No.	Topical Group				TGL				Sub-TGL										
2022/10/7(Fri)	Beta effect on edge transport, Optical vortex ECH The investigation of the impurity shielding performance of the ergodic layer by a systematic scan of the dust dropping rate using the impurity Powder Droppe, Comissioning of ICH in D(H) plasmas EBW				K.Nagaoka/Y.Takemura N.Tamura/M.Kobayashi [2177/2167, 2337/2169]				R.Seki/N.Kenmochi H.Kasahara/G.Motojima [2201/2208, 2203/2142]										
1282	instability/multi-ion				8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Time Table	U P	[instability]			[multi-ion]				[instabili ty]	D N									

Details and Experimental Conditions

Gas

[instability Coordinator: Y.Takemura](09:30 ~ 12:45) ECH, NBI 9:45-12:45 Beta effect on edge transport(Knieps) piggyback Commissioning of optical vortex ECH(Tsujimura)	H2,D2																																																																								
Maximum number of discharges : 120 Sequence:3min																																																																									
<table border="1"> <thead> <tr> <th>#</th><th>Option</th><th>Polarity</th><th>Rax(m)</th><th>Bax(T)</th><th>gamma</th><th>Bq(%)</th><th>Subcooled</th></tr> </thead> <tbody> <tr> <td>1</td><td></td><td>CW</td><td>3.9</td><td>1.0</td><td>1.2538</td><td>100.0</td><td></td></tr> <tr> <td>2</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>3</td><td>✓</td><td>CW</td><td>3.75</td><td>1.0</td><td>1.2538</td><td>100.0</td><td></td></tr> </tbody> </table>	#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled	1		CW	3.9	1.0	1.2538	100.0		2	✓	CW	3.6	2.75	1.2538	100.0		3	✓	CW	3.75	1.0	1.2538	100.0																																										
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[multi-ion Coordinator: H.Kasahara](12:45 ~ 17:15) ECH, NBI, ICH 13:15-15:20 Dust dropping experiment using the impurity Powder Dropper (M. Shoji) Mag. Conf. to be used: #1, #2, (#5) 15:20-17:20 Commissioning of ICH in D(H) plasmas (H. Kasahara, ICH group) Mag. Conf. to be used: #2, #3, (#6), (#7), #4, (#8)	H2,D2,Ar																																																																								
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[instability Coordinator: Y.Takemura](17:15 ~ 18:45) ECH, NBI 17:45-18:45 Electron Bernstein wave emission experiment(Igami)	H2,D2																																																																								
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Wall Conditioning

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

Remarks

(instability)Fast TS, Divertor Langmuir probe with fast mode
(multi-ion)Various dust (B, C, Li) drop, measurement of the high-speed stereo camera (newly installed at 2.5-U), measurement of boron density distribution by CXS, measurement of various impurities in the plasma periphery Ion temperature distribution by CXS, Fast ion measurement by FIDA, High sensitivity H, D ratio measurement

【Precautions for today's LHD experiments】

- (id:677) Impurity gas puff
- (id:678) Impurity powder dropper
- (id:696) ICH: IC wave injection into the vaccum (w/o plasma)
- (id:706) ICH: Antennae insertion for plasma heating by ICH : Subcool required
- (id:712) NBI: Injection into the discharges with low fields
- (id:718) ECH: Optical Vortex injection : Subcool required
- (id:722) Insertion of sample, etc: Insertion of water-cooled tungsten divertor test piece