

23rd 4th week(11/01/21 - 11/05/21) schedule for LHD experiment

Weekly report : H.Takahashi

Date	Day of the week	Bt direction	Wall condition (mor)	Schedule of the day														Wall conditioning (night)	Gas	Experiment implementation system	Remark
				Morning (~ 12:15)							Afternoon (12:15 ~ 18:45)										
11/1	Mo.																				
11/2	Tu.	CCW		[multi-ion](09:45 ~ 13:15)ECH, NBI Accumulation of confinement data in the case of significant ion heating # Opt. Pol. Rax Bax gamma Bq SC 1 CCW 3.6 1.64 1.2538 100.0 2 CCW 3.6 2.75 1.2538 100.0	[turbulence](13:15 ~ 14:45)ECH, NBI, ICH Isotope effects of multi-scale turbulence # Opt. Pol. Rax Bax gamma Bq SC 1 CCW 3.6 2.75 1.2538 100.0	[multi-ion](14:45 ~ 17:15)ECH, NBI Z-dependence of transport characteristics for the high-Ti plasmas # Opt. Pol. Rax Bax gamma Bq SC 1 CCW 3.6 2.75 1.2538 100.0	[turbulence](17:15 ~ 18:45)ECH, NBI, ICH Transition to the high ion temperature discharge # Opt. Pol. Rax Bax gamma Bq SC 1 CCW 3.55 2.7887 1.2538 100.0	Div Cryo	D2, Ar, H2, He	[Responsible person] S.Masuzaki / Y.Takemura [ECH] Yoshimura [NBI] Ikeda [central ctrl./data proc.] Yasui/Ohsuna, Ogawa [radiation] Kobuchi [EXP LAN] Inoue/Yamamoto [TGL] N.Tamura/M.Kobayashi, T.Tokuzawa [SubTGL] H.Kasahara/G.Motojima, T.Kobayashi/T.Tsujimura/M.Nakata	(multi-ion)Deuterium glow discharge for wall conditioning, work diverter cryo-pumping (turbulence)DivCryo ON except for 2-I GPI, Reflectometer, PCI, BES, CXS, TS, ECE (multi-ion)use of LID (turbulence)DivCryo ON except for 2-I GPI, Reflectometer, PCI, BES, CXS, TS, ECE (id:612) Impurity pellet/TESPEL (id:617) Mag. Conf.: Rax = 3.55 - 3.599 m (id:626) Mag. Conf.: Using LID coil (id:631) perpNBI>10MJ : Subcool required										
11/3	We.																				
11/4	Th.	CW		[instability](09:30 ~ 12:30)NBI Detachment # Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.9 0.5 1.2538 100.0 2 CW 3.6 0.5 1.2538 100.0	[multi-ion](12:30 ~ 15:30)ECH, NBI Carbon IPD # Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.55 1.0 1.2538 100.0 2 CW 3.6 2.75 1.2538 100.0	[spectroscopy](15:30 ~ 18:45)ECH, NBI, ICH Impurity Transport # Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0	Div Cryo	H2, N2, Ne, Ar, D2	[Responsible person] K.Tanaka / K.Nagaoka [ECH] Kenmochi [NBI] Nakano [central ctrl./data proc.] Yasui/Ohsuna, Ogawa [radiation] Miyake [EXP LAN] Yamamoto/Inoue [TGL] K.Nagaoka/Y.Takemura, N.Tamura/M.Kobayashi, M. Goto [SubTGL] S.Kamio/N.Kenmochi, H.Kasahara/G.Motojima, M.Yoshinuma/T.Oishi/T.Kawate	(instability)CXS,PCI,LID (multi-ion)CXS,PCI,LID(cancel) (spectroscopy)CXS,PCI,Reflectometer (id:612) Impurity pellet/TESPEL (id:613) impurity gas puff (id:614) Impurity powder dropper (id:617) Mag. Conf.: Rax = 3.55 - 3.599 m (id:626) Mag. Conf.: Using LID coil (id:657) ICH: Antennae insertion for plasma heating by ICH (id:668) NB injection for low field discharges											
11/5	Fr.	CCW																None		[Responsible person] K.Ida / N.Tamura [ECH] Yanai [NBI] Nuga [central ctrl./data proc.] Yasui/Ohsuna, Ogawa [radiation] Tanaka [EXP LAN] Watanabe/Nakamura [TGL] [SubTGL]	

Daily Schedule

Prepared by

H.Kasahara
T.Tsujimura

Date	Experimental Subject																																							
2021/11/2(Tue)	Accumulation of confinement data in the case of significant ion heating Isotope effects of multi-scale turbulence Z-dependence of transport characteristics for the high-Ti plasmas Transition to the high ion temperature discharge																																							
Exp. No.	Topical Group						TGL					Sub-TGL																												
1226	multi-ion/turbulence						N.Tamura/M.Kobayashi T.Tokuzawa [2337/2169, 2217]					H.Kasahara/G.Motojima T.Kobayashi/T.Tsujimura/M.Nakata [2065/2142, 2231/2023/2276]																												
Time Table	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																									
		U P	[multi-ion]			[turbulence]		[multi-ion]		[turbulence]		D N																												
Details and Experimental Conditions														Gas																										
[multi-ion](09:45 ~ 13:15)ECH, NBI Accumulation data in the case of significant ion heating (H. Yamada). Maximum number of discharges : 40 Sequence:3min														D2,Ar																										
<table><tr><td>#</td><td>Option</td><td>Polarity</td><td>Rax(m)</td><td>Bax(T)</td><td>gamma</td><td>Bq(%)</td><td>Subcooled</td></tr><tr><td>1</td><td></td><td>CCW</td><td>3.6</td><td>1.64</td><td>1.2538</td><td>100.0</td><td></td></tr><tr><td>2</td><td></td><td>CCW</td><td>3.6</td><td>2.75</td><td>1.2538</td><td>100.0</td><td></td></tr></table>														#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled	1		CCW	3.6	1.64	1.2538	100.0		2		CCW	3.6	2.75	1.2538	100.0		H2,D2,He,Ar		
#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled																																	
1		CCW	3.6	1.64	1.2538	100.0																																		
2		CCW	3.6	2.75	1.2538	100.0																																		
[turbulence](13:15 ~ 14:45)ECH, NBI, ICH Isotope effects on plasma confinement properties and nonlinear interaction of multi- scale turbulence in LHD plasmas are investigated. Maximum number of discharges : 40 Sequence:3min														H2,D2,He,Ar																										
<table><tr><td>#</td><td>Option</td><td>Polarity</td><td>Rax(m)</td><td>Bax(T)</td><td>gamma</td><td>Bq(%)</td><td>Subcooled</td></tr><tr><td>1</td><td></td><td>CCW</td><td>3.6</td><td>2.75</td><td>1.2538</td><td>100.0</td><td></td></tr></table>														#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled	1		CCW	3.6	2.75	1.2538	100.0		He,Ar										
#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled																																	
1		CCW	3.6	2.75	1.2538	100.0																																		
[multi-ion](14:45 ~ 17:15)ECH, NBI Z-dependence of transport characteristics for the high-Ti plasmas (M. Goto). Maximum number of discharges : 40 Sequence:3min														H2,D2,He,Ar																										
<table><tr><td>#</td><td>Option</td><td>Polarity</td><td>Rax(m)</td><td>Bax(T)</td><td>gamma</td><td>Bq(%)</td><td>Subcooled</td></tr><tr><td>1</td><td></td><td>CCW</td><td>3.6</td><td>2.75</td><td>1.2538</td><td>100.0</td><td></td></tr></table>														#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled	1		CCW	3.6	2.75	1.2538	100.0		H2,D2,He,Ar										
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1		CCW	3.6	2.75	1.2538	100.0																																		
[turbulence](17:15 ~ 18:45)ECH, NBI, ICH Plasma behaviors at the boundary of the transition to the high ion temperature discharge are tested for understanding the transition to the high ion temperature discharges. Maximum number of discharges : 40 Sequence:3min														H2,D2,He,Ar																										
<table><tr><td>#</td><td>Option</td><td>Polarity</td><td>Rax(m)</td><td>Bax(T)</td><td>gamma</td><td>Bq(%)</td><td>Subcooled</td></tr><tr><td>1</td><td></td><td>CCW</td><td>3.55</td><td>2.7887</td><td>1.2538</td><td>100.0</td><td></td></tr></table>														#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled	1		CCW	3.55	2.7887	1.2538	100.0		H2,D2,He,Ar										
#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled																																	
1		CCW	3.55	2.7887	1.2538	100.0																																		
Wall Conditioning		GD(Before Exp.): No , Cryopump(During Exp.): Yes																																						
Remarks		(multi-ion)Deuterium glow discharge for wall conditioning, work diverter cryo-pumping (turbulence)DivCryo ON except for 2-I GPI, Reflectometer, PCI, BES, CXS, TS, ECE (multi-ion)use of LID (turbulence)DivCryo ON except for 2-I GPI, Reflectometer, PCI, BES, CXS, TS, ECE 【Precautions for today's LHD experiments】 (id:612) Impurity pellet/TESPEL (id:617) Mag. Conf.: Rax = 3.55 - 3.599 m (id:626) Mag. Conf.: Using LID coil (id:631) perpNBI>10MJ : Subcool required																																						

Daily Schedule

Prepared by

M. Yoshinuma
M. Goto

Date	Experimental Subject																																							
2021/11/4(Thu)	Detachment Carbon IPD Impurity Transport																																							
Exp. No.	Topical Group					TGL					Sub-TGL																													
1227	instability/multi-ion/spectroscopy					K.Nagaoka/Y.Takemura N.Tamura/M.Kobayashi M. Goto [2177/2167, 2337/2169, 2290]					S.Kamio/N.Kenmochi H.Kasahara/G.Motojima M.Yoshinuma/T.Oishi/T.Kawate [2194/2208, 2065/2142, 2172/2022/]																													
Time Table	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																									
		U P	[instability]			[multi-ion]			[spectroscopy]			D N																												
Details and Experimental Conditions														Gas																										
[instability](09:30 ~ 12:30)NBI 1) Sustainment of Detachment with 0.5T Maximum number of discharges : 60 Sequence:3min <table><tr><td>#</td><td>Option</td><td>Polarity</td><td>Rax(m)</td><td>Bax(T)</td><td>gamma</td><td>Bq(%)</td><td>Subcooled</td></tr><tr><td>1</td><td></td><td>CW</td><td>3.9</td><td>0.5</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>0.5</td><td>1.2538</td><td>100.0</td><td></td></tr></table>														#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled	1		CW	3.9	0.5	1.2538	100.0		2		CW	3.6	0.5	1.2538	100.0		H2,N2,Ne,Ar		
#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled																																	
1		CW	3.9	0.5	1.2538	100.0																																		
2		CW	3.6	0.5	1.2538	100.0																																		
[multi-ion](12:30 ~ 15:30)ECH, NBI Penetration of carbon impurities into the core plasma region by carbon IPD Maximum number of discharges : 40 Sequence:3min <table><tr><td>#</td><td>Option</td><td>Polarity</td><td>Rax(m)</td><td>Bax(T)</td><td>gamma</td><td>Bq(%)</td><td>Subcooled</td></tr><tr><td>1</td><td></td><td>CW</td><td>3.55</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></table>														#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled	1		CW	3.55	1.0	1.2538	100.0		2		CW	3.6	2.75	1.2538	100.0		D2		
#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled																																	
1		CW	3.55	1.0	1.2538	100.0																																		
2		CW	3.6	2.75	1.2538	100.0																																		
[spectroscopy](15:30 ~ 18:45)ECH, NBI, ICH Multi-tracer Impurity transport studies by TESPEL injections into multi-ion plasmas(R.Bussiahn, N.Tamura) Maximum number of discharges : 70 Sequence:3min <table><tr><td>#</td><td>Option</td><td>Polarity</td><td>Rax(m)</td><td>Bax(T)</td><td>gamma</td><td>Bq(%)</td><td>Subcooled</td></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></table>														#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled	1		CW	3.6	2.75	1.2538	100.0		H2,D2,N2,Ar										
#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled																																	
1		CW	3.6	2.75	1.2538	100.0																																		
Wall Conditioning																																								
		GD(Before Exp.): H2 , Cryopump(During Exp.): Yes																																						
Remarks		(instability)CXS,PCI,LID (multi-ion)CXS,PCI,LID(cancel) (spectroscopy)CXS,PCI,Reflectometer 【Precautions for today's LHD experiments】 (id:612) Impurity pellet/TESPEL (id:613) impurity gas puff (id:614) Impurity powder dropper (id:617) Mag. Conf.: Rax = 3.55 - 3.599 m (id:626) Mag. Conf.: Using LID coil (id:657) ICH: Antennae insertion for plasma heating by ICH (id:668) NB injection for low field discharges																																						

Daily Schedule

Prepared by

Date	Experimental Subject														
2021/11/5(Fri)															
Exp. No.	Topical Group					TGL					Sub-TGL				
1228															
Time Table	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		U P										D N			
Details and Experimental Conditions														Gas	
Wall Conditioning	GD(Before Exp.): No , Cryopump(During Exp.): No														
Remarks															