25th 2nd week(03/18/24 - 03/22/24) schedule for LHD experiment

Weekly report :

Date	Day of the week	Bt direction	Schedule of the day: Morning (~ 12:15)	Schedule of the day: Afternoon (12:15 ~ 16:45)	Wall	Gas	Experiment implementation system	Remark
3/18	Mo.				Sat: None Sun: None Mon: None			
3/19	Tu.	CW	[TC](10:30 ~ 14:30)ECH, NBI, ICH density peaking characteristics # Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0	[MAP](14:30 ~ 16:45)ECH, NBI Investigation of the impurity shielding performance of the LHD peripheral plasma using the IPD # 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	None Div Cryo	H2, Ar	【Responsible person】M.Isobe / H.Hayashi 【Coordinator#1】C.Suzuki/T.Tokuzawa 【Coordinator#2】G.Motojima/M.Yoshinuma 【ECH】H.Igami 【Gas・vacuum・shutter】C/A 【Low temp.】ohba.kouki 【LID power】M.Kawai/K.Nagahara 【Coil power】tanoue.hiroyuki 【central ctrl.】maeno.hiroya 【data proc.】M.Ohsuna 【EXP LAN】nakamura.osamu	(TC)Impurity Pellet, HIBP, CXS, carbon pellet, BL4(one-sided operation) (MAP)Fast camera (2.5-U), Spectroscopy, CXS (id:723) Impurity pellet/TESPEL (id:725) Impurity powder dropper (id:729) ECH: Low absorption condition (id:737) ECH: Commissioning (alignment, profile check) (id:746) ECH: EC wave Injection from the Port 1.5Uo antenna (id:748) ECH: off-axis injection (Combined) (id:749) ICH: Antennae insertion for
3/20	We.	CCW	[IA](10:30 ~ 14:15)ECH, NBI, ICH ECH commissioning, Interactions of energetic ions with Alfven eigenmodes # Opt. Pol. Rax Bax gamma Bq SC 1 CCW 3.6 2.75 1.2538 100.0 2 CCW 3.6 1.375 1.2538 100.0	[MAP](14:45 ~ 16:45)ECH, NBI Effect of impurity seeding for divertor detachment on anomaly detection of radiative collapse # Opt. Pol. Rax Bax gamma Bq SC 1 CCW 3.65 2.71 1.2538 100.0	None	H2, N2, Ne, Ar, Kr, Xe	【Responsible person】M.Osakabe / H.Hayashi 【Coordinator#1】Y.Hayashi/T.Kawate 【Coordinator#2】K.Mukai/Y.Takemura 【ECH】M.Nishiura 【Gas・vacuum・shutter】B/C 【Low temp.】moriuchi.sadatomo 【LID power】M.Kawai/K.Nagahara 【Coil power】takami.shigeyuki 【central ctrl.】maeno.hiroya 【data proc.】M.Ohsuna 【EXP LAN】inoue.tomoyuki	(IA)ice pellet injection (MAP)LID(14:55-16:45) (id:724) Impurity gas puff (id:729) ECH: Low absorption condition (id:731) Mag. Conf.: Using LID coil (id:737) ECH: Commissioning (alignment, profile check) (id:746) ECH: EC wave Injection from the Port 1.5Uo antenna (id:748) ECH: off-axis injection (Combined) (id:749) ICH: Antennae insertion for plasma heating by ICH : Subcool required (id:757) ECH: Optical Vortex
3/21	Th.	CW	[MAP](10:30 ~ 14:30)ECH, NBI, ICH ECH/ICH commissioning, Impurity behaviour study with triple TESPEL injection # Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0	[IA](14:45 ~ 16:45)ECH, NBI Investigation of cross-scale interaction between electron-scale and ion-scale turbulence # Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.55 2.7887 1.2538 100.0 2 ✓ CW 3.58 2.7654 1.2538 100.0	None Div Cryo	H2, Ar	【Responsible person】S.Sakakibara / H.Hayashi 【Coordinator#1】G.Motojima/K.Ogawa 【Coordinator#2】M.shohji/N.Kenmochi 【ECH】N.Kenmochi 【Gas・vacuum・shutter】A/B 【Low temp.】ohba.kouki 【LID power】M.Kawai/K.Nagahara 【Coil power】tanoue.hiroyuki 【central ctrl.】maeno.hiroya 【data proc.】M.Ohsuna 【EXP LAN】inoue.tomoyuki	(IA)LID(14:39-16:45) (id:723) Impurity pellet/TESPEL (id:724) Impurity gas puff (id:728) Mag. Conf.: 3.55 m =< Rax < 3.6 m (id:729) ECH: Low absorption condition (id:731) Mag. Conf.: Using LID coil (id:737) ECH: Commissioning (alignment, profile check) (id:746) ECH: EC wave Injection from the Port 1.5Uo antenna (id:748) ECH: off-axis injection (Combined) (id:749) ICH: Antennae insertion for plasma heating by ICH : Subcool required
3/22	Fr.	CW	[TC](10:30 ~ 14:45)ECH, NBI, ICH ECH comissioning, Investigation of turbulence and heat propagation characteristics, Non-local heat transport from the peripheral region. # Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0	[IA](14:45 ~ 16:45)ECH, NBI Fast-ion losses induced by pellet injection on density limit. # Opt. Pol. Rax Bax gamma Bq SC 1 CW 3.6 2.75 1.2538 100.0	None	H2, Ar	【Responsible person】K.Tanaka / H.Hayashi 【Coordinator#1】M.Yoshinuma/R.Seki 【Coordinator#2】C.Suzuki/N.Kenmochi 【ECH】R.Yanai 【Gas・vacuum・shutter】C/A 【Low temp.】ohba.kouki 【LID power】M.Kawai/K.Nagahara 【Coil power】takami.shigeyuki 【central ctrl.】maeno.hiroya 【data proc.】M.Ohsuna 【EXP LAN】nakamura.osamu	(TC)fast TS, CXS, BS(position scan), HIBP, MSE, NBI#3 for MSE modulation of NBI#4 and #5 (IA)pellet, BES, CXS, HIBP, MSE, Neutral Particle Diagnostics(DNPA, FIDA) (id:729) ECH: Low absorption condition (id:737) ECH: Commissioning (alignment, profile check) (id:743) ECH: Fundamental X-mode injection from the high field side (id:746) ECH: EC wave Injection from the Port 1.5Uo antenna (id:748) ECH: off-axis injection (Combined)

LHD project

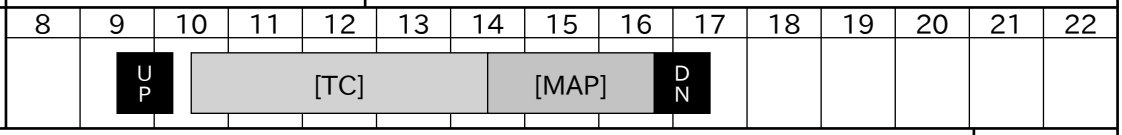
Daily Schedule

Prepared by
T.Tokuzawa N.Tamura

Date	Experimental Subject
2024/3/19(Tue)	density peaking characteristics Investigation of the impurity shielding performance of the LHD peripheral plasma using the IPD

Exp. No.	Experimental Session Group	Session Coordinator
1333	TC/MAP	C.Suzuki[2255] / G.Motojima[2142] T.Tokuzawa[2217] / M.Yoshinuma[2172]

Time Table



Details and Experimental Conditions

Gas: H2,Ar

[TC](10:30 ～ 14:30) ECH, NBI, ICH
10:30-12:15 ECH/ICH commissioning (M. Nishiura, T. Seki)
12:15-13:20 Investigation of electron heat pulse propagation in density peaking plasma in LHD (R. Yanai)
13:20-14:30 Study on core density peaking and flattening in plasmas (M. Nishiura)

Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CW	3.6	2.75	1.2538	100.0	

Gas: H2

[MAP](14:30 ～ 16:45) ECH, NBI
14:30 - 16:45 Investigation of the impurity shielding performance of the LHD peripheral plasma using the IPD (M. Shoji)

Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CW	3.6	2.75	1.2538	100.0	
2		CW	3.75	2.64	1.2538	100.0	

Wall Conditioning

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

Remarks

(TC)Impurity Pellet, HIBP, CXS, carbon pellet, BL4(one-sided operation)

(MAP)Fast camera (2.5-U), Spectroscopy, CXS

【Precautions for today's LHD experiments】
(id:723) Impurity pellet/TESPEL
(id:725) Impurity powder dropper
(id:729) ECH: Low absorption condition
(id:737) ECH: Commissioning (alignment, profile check)
(id:746) ECH: EC wave Injection from the Port 1.5Uo antenna
(id:748) ECH: off-axis injection (Combined)
(id:749) ICH: Antennae insertion for plasma heating by ICH : Subcool required
(id:757) ECH: Optical Vortex injection

LHD project

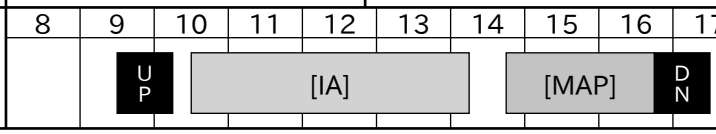
Daily Schedule

Prepared by
N.Tamura

Date	Experimental Subject
2024/3/20(Wed)	ECH commissioning, Interactions of energetic ions with Alfven eigenmodes Effect of impurity seeding for divertor detachment on anomaly detection of radiative collapse

Exp. No.	Experimental Session Group	Session Coordinator
1334	IA/MAP	Y.Hayashi[2121] / K.Mukai[2240] T.Kawate[2256] / Y.Takemura[2167]

Time Table



Details and Experimental Conditions

[IA](10:30 ～ 14:15) ECH, NBI, ICH
10:30-12:15 ECH commissioning (M. Nishiura)
12:15-13:15 Study of interactions of energetic ions with stable or weakly unstable Alfven eigenmodes in high density LHD plasmas produced by ice pellet injection (K. Toi, K. Ogawa)
13:15-13:45 [Change of Mag. Config., 2.75T -> 1.375T]
13:45-14:15 Study of interactions of energetic ions with stable or weakly unstable Alfven eigenmodes in high density LHD plasmas produced by ice pellet injection (K. Toi, K. Ogawa)
14:15-14:55 [Change of Mag. Config., 3.6m,1.375T -> 3.65m,2.71T]

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	

[MAP](14:45 ～ 16:45) ECH, NBI
14:55-16:45 Effect of impurity seeding for divertor detachment on anomaly detection of radiative collapse (K. Mukai)

Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CCW	3.65	2.71	1.2538	100.0	

Gas

H2

H2,N2,Ne,Ar,Kr,Xe

Wall Conditioning

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

Remarks

(IA)ice pellet injection

(MAP)LID(14:55-16:45)

【Precautions for today's LHD experiments】
(id:724) Impurity gas puff
(id:729) ECH: Low absorption condition
(id:731) Mag. Conf.: Using LID coil
(id:737) ECH: Commissioning (alignment, profile check)
(id:746) ECH: EC wave Injection from the Port 1.5Uo antenna
(id:748) ECH: off-axis injection (Combined)
(id:749) ICH: Antennae insertion for plasma heating by ICH : Subcool required
(id:757) ECH: Optical Vortex injection

LHD project

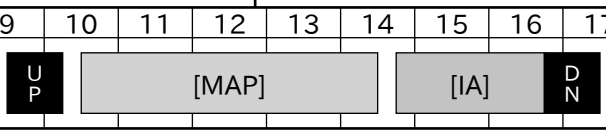
Daily Schedule

Prepared by
N.Tamura

Date	Experimental Subject
2024/3/21(Thu)	ECH/ICH commissioning, Impurity behaviour study with triple TESPEL injection Investigation of cross-scale interaction between electron-scale and ion-scale turbulence

Exp. No.	Experimental Session Group	Session Coordinator
1335	MAP/IA	G.Motojima[2142] / M.shohji[2151] K.Ogawa[2229] / N.Kenmochi[2208]

Time Table



Details and Experimental Conditions

[MAP](10:30 ～ 14:30) ECH, NBI, ICH
10:30-12:15 ECH/ICH commissioning(Nishiura, Seki)
12:15-14:18 Impurity behaviour study with triple TESPEL injection(Kubkowska, Tamura)
14:18-14:27 NBI calib. 3 shots
14:27-14:39 [Change of Mag. Config., 3.6m, 2.75T -> 3.55m, 2.7887T]

Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CW	3.6	2.75	1.2538	100.0	

Gas: H2,Ar

[IA](14:45 ～ 16:45) ECH, NBI
14:39-16:45 Investigation of cross-scale interaction between electron-scale and ion-scale turbulence(Nasu, Tokuzawa)

Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CW	3.55	2.7887	1.2538	100.0	
2	✓	CW	3.58	2.7654	1.2538	100.0	

Gas: H2,Ar

Wall Conditioning

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

Remarks

(IA)LID(14:39-16:45)

【Precautions for today's LHD experiments】
(id:723) Impurity pellet/TESPEL
(id:724) Impurity gas puff
(id:728) Mag. Conf.: 3.55 m =< Rax < 3.6 m
(id:729) ECH: Low absorption condition
(id:731) Mag. Conf.: Using LID coil
(id:737) ECH: Commissioning (alignment, profile check)
(id:746) ECH: EC wave Injection from the Port 1.5Uo antenna
(id:748) ECH: off-axis injection (Combined)
(id:749) ICH: Antennae insertion for plasma heating by ICH : Subcool required
(id:757) ECH: Optical Vortex injection

LHD project

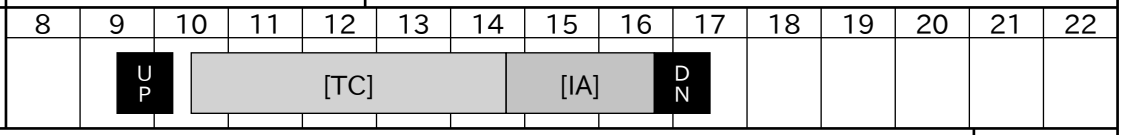
Daily Schedule

Prepared by
H.Igami N.Tamura

Date	Experimental Subject
2024/3/22(Fri)	ECH comissioning, Investigation of turbulence and heat propagation characteristics, Non-local heat transport from the peripheral region. Fast-ion losses induced by pellet injection on density limit.

Exp. No.	Experimental Session Group	Session Coordinator
1336	TC/IA	M.Yoshinuma[2172] / C.Suzuki[2255] R.Seki[2201] / N.Kenmochi[2208]

Time Table



Details and Experimental Conditions

Gas

[TC](10:30 ～ 14:45) ECH, NBI, ICH
10:30 - 12:15 ECH comissioning. (M.Nishiura, T. Seki)
12:15 - 12:24 NBI calib.
12:24 - MSE calib.
12:35 - 13:40 Investigation of turbulence and heat propagation characteristics. (N. Kenmochi)
13:40 - 14:40 Non-local heat transport from the peripheral region. (H. Igami)

NBI pattern: #2, (#2, #3, #4, #5) - (#3, #4, #5) - (#3, #4)

Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CW	3.6	2.75	1.2538	100.0	

H2,Ar

[IA](14:45 ～ 16:45) ECH, NBI
14:40 - 16:45 Fast-ion losses induced by pellet injection on density limit. (B.L.Miranda, N. Tamura)

Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CW	3.6	2.75	1.2538	100.0	

H2,Ar

Wall Conditioning

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

Remarks

(TC)fast TS, CXS, BS(position scan), HIBP, MSE, NBI#3 for MSE modulation of NBI#4 and #5

(IA)pellet, BES, CXS, HIBP, MSE, Neutral Particle Diagnostics(DNPA, FIDA)

【Precautions for today's LHD experiments】
(id:729) ECH: Low absorption condition
(id:737) ECH: Commissioning (alignment, profile check)
(id:743) ECH: Fundamental X-mode injection from the high field side
(id:746) ECH: EC wave Injection from the Port 1.5Uo antenna
(id:748) ECH: off-axis injection (Combined)
(id:749) ICH: Antennae insertion for plasma heating by ICH : Subcool required
(id:757) ECH: Optical Vortex injection