LHD project

Daily Schedule

Prepared by
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Date	Experimental Subject
2022/12/20(Tue)	GAM eigenmode 2D structure measurements optimization of non-collisional energy transfer, global stability and transport characteristics of a helical plasma with zero rotational-transform layer Effect of injection of different powder materials on plasma turbulence and performance

Exp. No.	Topical Group	TGL	Sub-TGL
1324	turbulence/instability	T.Tokuzawa K.Nagaoka/Y.Takemura [2217, 2177/2167]	A.Shimizu/T.Kobayashi/M.Nishiura/M.Nakata R.Seki/N.Kenmochi [2454/2231/2184/2276, 2201/2208]

Time Table	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
		UP	[turbulence]		[instability]			[turbulence]				DN			

Details and Experimental Conditions

Gas

[turbulence Coordinator: AkihiroShimizu](09:45 ～ 11:45) ECH, NBI
9:40-11:55 GAM eigenmode 2D structure measurements(Tokuzawa)

Maximum number of discharges : 60
Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CW	3.75	1.375	1.2538	100.0	
2		CW	3.75	1.25	1.2538	100.0	
3		CW	3.75	1.3	1.2538	100.0	
4	✓	CW	3.75	1.2	1.2538	100.0	

Gas: H2,Ne,Ar

[instability Coordinator: NaokiKenmochi](11:45 ～ 14:45) ECH, NBI
11:55-13:20 Optimization of non-collisional energy transfer from energetic ions to bulk ions in reversed magnetic shear plasmas (K. Toi, K. Ogawa)
13:20-14:45 Studies of global stability and transport characteristics of a helical plasma with zero rotational-transform layer produced by non-inductive counter current drive (K. Toi, S. Ohdachi)

Maximum number of discharges : 70
Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CW	3.75	1.3	1.2538	100.0	
2		CW	3.6	1.3	1.2538	100.0	
3	✓	CW	3.75	1.2	1.2538	100.0	
4	✓	CW	3.75	1.5	1.2538	100.0	
5	✓	CW	3.6	1.2	1.2538	100.0	
6	✓	CW	3.6	1.5	1.2538	100.0	

Gas: H2,Ne,Ar

[turbulence Coordinator: AkihiroShimizu](14:45 ～ 18:45) ECH, NBI, ICH
14:45-14:55 NBI calibration
14:55-15:30 Change magnetic field configuration
15:30-17:50 Effect of injection of different powder materials on plasma turbulence and performance(Nespoli, Masuzaki)
17:50-18:45 Configuration effects of impurity powder injection(Tanaka)

Maximum number of discharges : 120
Sequence:3min

#	Option	Polarity	Rax(m)	Bax(T)	gamma	Bq(%)	Subcooled
1		CW	3.6	2.75	1.2538	100.0	
2		CW	3.8	2.7	1.2538	100.0	✓

Gas: H2,Ne,Ar

Wall Conditioning

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

Remarks

(turbulence)MSE, HIBP, ECEI, NBI long(5s), LID
(instability)Crystal(indispensable), PCI, HIBP, CXS, NBI long(5s)
(turbulence)CXS, PCI, IPD, NBI long(5s)

【Precautions for today's LHD experiments】
(id:677) Impurity gas puff
(id:678) Impurity powder dropper
(id:685) Mag. Conf.: Using LID coil
(id:687) High plasma current exp. (100 kA =< Ip < 150kA) (Combined)
(id:691) Mag. Conf.: Subcool conditions (Combined) : Subcool required
(id:705) ECH: off-axis injection (Combined)
(id:706) ICH: Antennae insertion for plasma heating by ICH : Subcool required
(id:712) NBI: Injection into the discharges with low fields
(id:720) Probe: Edge plasma measurement using the fast-scanning Langmuir probes
(id:721) Insertion of sample, etc: Exposure of a material sample to divertor plasma by the manipulators
(id:722) Insertion of sample, etc: Insertion of water-cooled tungsten divertor test piece