

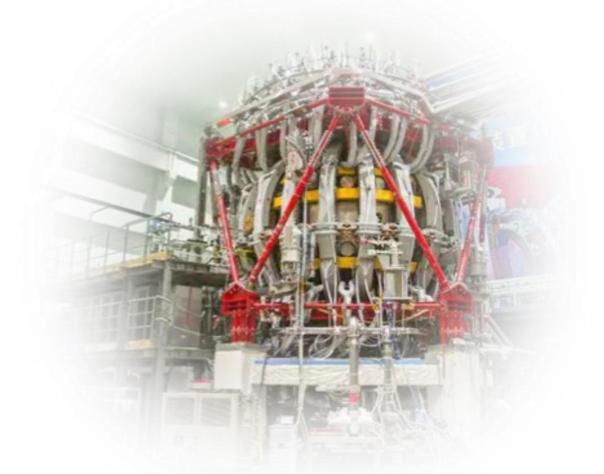


Annual Academic Conference

Conference Manual

April 27 - 28, 2021

Organizer: Center for Fusion Science, SWIP



Agenda

No.	Time	Presenter	Title	Host					
	April 27, 2021								
	1	Co	nference Room No.1						
1	09:00—09:20		Opening						
2-1	09:20—09:40	Juan Du	The progress of the qualification program of the ITER enhanced heat flux first walls						
2-2	09:40—10:00	Guoliang Xiao	Innovative Progress of Supersonic Molecular Beam Injection for Controlling Particle and Instabilities in Fusion Devices	Qiang Li					
3-1	10:00—10:15	Qi Yu Development of a Core Snubber System for 200 kV High Voltage Deck of Radio Frequency Negative Ion Source		Qiang Li					
3-2	10:15—10:30	Shaobo Gong	Improved confinement with turbulence transition by low hybrid wave in high βN H-mode plasmas						
-	10:30—10:40		Break						
4-1	10:40—11:00	Xiao Song	Plasma initiation and preliminary magnetic control in the HL-2M tokamak						
4-2	11:00—11:20	Ruirui Ma	Global theory of beta-induced Alfvén eigenmode excited by trapped energetic electrons	Jiquan Li					
5-1	11:20—11:35	Zhe Chen	An overview of thick tungsten coating prepared by chemical vapor deposition and manufacture of relevant mockup						

5-2	11:35—11:50	Jinming Gao	Type-I ELM power loads on the closed outer divertor targets		
6	12:30—14:00		Poster Section		
7-1	14:00—14:20	Huiling Wei	Design of a test negative ion source of combination with RF discharge and filaments arc discharge for NBI heating		
7-2	14:20—14:40	Min Jiang	Modulation of the trapped electron driven turbulence by m/n=2/1 tearing mode in the core of HL-2A plasmas	Pengyuan	
8-1	14:40—14:55	Liming Yu	Experimental Evidence of Nonlinear Avalanche Dynamics of Energetic Particle Modes	Li	
8-2	14:55—15:10	Sun Tengfei	Edge Coherent Oscillation Providing Nearly Continuous Transport during ELM Mitigation by n = 1 RMP in HL-2A		
-	15:10—15:20		Break		
9-1	15:20—15:40	Yuncong Huang	Experimental Study on Baking Performance of HL-2M Vacuum Vessel		
10-1	15:40—15:55	Yaorong Yang	Hybrid simulations of reversed shear Alfvén eigenmodes and related nonlinear resonance with fast ions in a tokamak plasma		
10-2	15:55—16:10	Zhenyuan Fan	Design and Simulation of High Voltage Power Supply in CFETR Ion Cyclotron Auxiliary Heating System	Mei Huang	
10-3	16:10—16:25	Neng Zhang	Ideal internal kink stability in presence of plasma flow and neoclassical toroidal viscosity due to energetic particles		
10-4	16:25—16:40	Lisha Xu	A preliminary study on the feasible design of bionic blanket concept		

No.	Time	Presenter	Agenda Item	Host					
	April 28, 2021 Conference Room No.1								
1-1	09:00—09:20	Long Zhang	Progress on the safety demonstration of China ITER Helium Coolant Ceramic Breeder Test Blanket						
1-2	09:20—09:40	Hailong Du	A new concept advanced divertor manipulating $E \times B$ drift to improve Detachment for Both Bt directions on HL-2M						
2-1	09:40—09:55	Yunpeng Zou	Experimental Validation of an Improved Critical Gradient Model and Alpha Particle Redistribution Prediction for CFETR Steady State Operation	Jiming Chen					
2-2	09:55—10:10	Pan Huang	The development of W/RAFM-steel diffusion bonding technologies for fusion reactor first wall in SWIP						
2-3	10:10—10:25	Dong Li	Development of the Bayesian tomography method for the study of MHD instability and impurity transport						
-	10:25—10:35		Break						
3-1	10:35—10:55	Xiaoyu Wang	Preliminary Safety Strategy and Safety Assessment for CFETR						
4-1	10:55—11:10	Na Wu	The mechanism research of double strike points of the divertor particle flux in HL-2A ECRH plasmas	Longwen					
4-2	11:10—11:25	Xin Chen	RAMI analysis of the helium refrigeration system of HL-2M tokamak	Yan					
4-3	11:25—11:40	Xinghua Wu	Preliminary design and fabrication R&D of CN HCCB TBM						

5	12:30—14:00	Poster Section			
6-1	14:00—14:20	Tianbo Wang	New progress of tungsten impurity real-time monitoring method on HL-2A		
7-1	14:20—14:35	5 Hangyu Zhou Development of high-speed soft x-ray imagi diagnostic on HL-2A		Yingqiao	
7-2	14:35—14:50	Feng Wang	Nonlinear interaction between magnetic island and ITG	Wang	
7-3	14:50—15:05	Yi Zhou	Demountable sealing solution for ITER Shield Block hot helium leak test		
-	15:05—15:15	Break			
8-1	15:15—15:35	Dongye Zhao	Investigation of boron distribution and material migration on the W7-X divertor by picosecond LIBS		
9-1	15:35—15:50	Hao Liu	Development of a large diameter helicon plasma source and characteristics of helicon plasma in linear plasma device LEAD.		
9-2	15:50—16:05	Lingfeng Lu	Development of a new COMSOL based helicon wave simulation tool	Xiang Liu	
9-3	16:05—16:20	Chao Liao	Simulation research on quench protection circuit using hybrid DC circuit breaker		
10	16:20—16:40	Selection of excellent reports and summary (participants: conference affairs group)			

Poster Section

No.	Depart- ment	Presenter	Title				
	12:30 – 14:00 April 27, 2021						
1-1	101	李兵利	Tomography of emissivity measured by Doppler coherence imaging spectroscopy diagnostic in HL-2A				
1-2	101	苗雨田	Synergistic influences of kinetic effects from thermal particles and fast ions on internal kink mode				
1-3	101	王雍钦	Numerical study of fast ion redistribution induced by fishbone instability				
1-4	101	付彩龙	Numerical Simulations of Plasma Dynamics and Optical Emission of High-Z Tokamak Wall Materials Ablated by Dual-Pulse Laser				
1-5	101	龚少博	Improved confinement with turbulence transition by low hybrid wave in high β_N H-mode plasmas				
1-6	101	李世敏	Integrated simulation of HL-2M plasma discharge with advanced snowflake divertor				
1-7	101	史永福	Fast integrated modelling of CFETR 1GW hybrid and steady state scenarios				
1-8	101	董冠岐	MARS-Q Modeling of kink-peeling instabilities in QH-mode plasma				
1-9	101	韩明昆	Impurity mode induced turbulent particle transport and its temperature screening effect				
1-10	101	李正吉	Steady state operation scheme design of HL-2M Tokamak				
1-11	101	吴婷	Effect of edge turbulent transport on scrape-off layer width on HL-2A tokamak				
1-12	101	马瑞瑞	Global theory of beta-induced Alfvén eigenmode excited by trapped energetic electrons				
1-13	101	郝广周	Toroidal modelling of plasma response to RMP fields for HL-2M				
1-14	101	杨耀荣	Hybrid simulations of reversed shear Alfvén eigenmodes and related nonlinear resonance with fast ions in a tokamak plasma				
1-15	101	刘自结	Plasma current reconstruction for HL-2A based on Bayesian inference				
1-16	101	任广智	Gyro-Landau-Fluid simulation of slab ion-temperature-gradient instabilities in reverse magentic shear configuration				
1-17	101	张晓然	Impurity effects on trapped electron modes in tokamak plasmas with inverted electron density profile				
1-18	102	张能	Ideal internal kink stability in presence of plasma flow and neoclassical toroidal viscosity due to energetic particles				

1-19	102	刘亮	The visible wide-angle view imaging system for first plasma on HL-2M tokamak
1-20	102	何小雪	Characteristics of ITBs and the connection between ITBs and MHDs on HL-2A Tokamak
1-21	102	臧临阁	Analysis of nonlinear mode-mode interaction using Hilbert transform on HL-2A
1-22	102	屈玉凡	Design of the stripping unit and the electromagnetic analysis unit for an E//B NPA
1-23	102	张洁	Application of the Abel-inversion method for the hard X-ray camera on the HL-2A tokamak
1-24	102	侯玉梅	Nonlinear simulations of the bump-on-tail instabilities in tokamak plasmas
1-25	102	姚可	Observation of high-k turbulent density fluctuations modulated by tearing mode islands in HL-2A core plasmas
1-26	102	蒋敏	Modulation of the trapped electron driven turbulence by m/n=2/1 tearing mode in the core of HL-2A plasmas
1-27	102	闻杰	Observation of a pedestal quasi-coherent mode in type-I ELMy H-mode of the HL-2A tokamak
1-28	102	王浩西	Development of CO2 dispersion interferometer on HL-2M
1-29	102	朱宇轩	Probe Measurements of Electron Energy Distribution in LEAD Plasma
1-30	102	高金明	Type-I ELM power loads on the closed outer divertor targets
1-31	102	肖国梁	Innovative Progress of Supersonic Molecular Beam Injection for Controlling Particle and Instabilities in Fusion Devices
1-32	102	赵伟	R&D of ITER Divertor Langmuir Probe
1-33	102	邓维楚	Design of Collective Thomson Scattering System on the HL-2A Tokamak
1-34	103	查方正	Recent progress of NFM design
1-35	103	邱银	Fabrication and Assembly Review of Toroidal Field Coil for HL-2M
1-36	103	胡毅	The Development of GDC Electrode for HL-2M
1-37	103	黄文玉	Progress of engineering design of CFETR He-cooled divertor
1-38	103	黄运聪	Briefly introduction of ITER Tokamak Assembly Contract(TAC1) work
1-39	103	黄运聪	Experimental Study on Baking Performance of HL-2M Vacuum Vessel
1-40	103	贾瑞宝	Design and Manufacture of Cooling Water Dynamic Monitoring Unit for HL-2M Water System

1-41	104	于祺	Development of a Core Snubber System for 200 kV High Voltage Deck of Radio Frequency Negative Ion Source
1-42	104	郝郁	Numerical simulation on the effect of contact thermal resistance on temperature distribution of water-cooled ceramic insulating glow discharge electrode
1-43	104	陈程	Research of millimeter wave TE10-TE11-HE11 mode converter
1-44	104	魏会领	Design of a test negative ion source of combination with RF discharge and filaments arc discharge for NBI heating
1-45	104	张琦	Operational procedure/Control logic of Nuclear Safety Functions of ITER GIS
1-46	105	程昊	Analysis of the flow field and heat transfer characteristics of purge ga s in pebble beds of solid tritium breeder blanket
1-47	105	都娟	The progress of the qualification program of the ITER enhanced heat flux first walls
1-48	105	巩保平	Investigation on the fragmentation of breeder pebbles and the packing behaviors of breeder pebble beds for fusion blanket
1-49	105	缑俊	Study on the transformation of laser welding mode of CLF-1 steel
1-50	105	洪志浩	Research on hydrogen isotope permeation of hydrogen and deuterium in CLF-1 steel
1-51	105	王琦杰	Engineering design of CFETR In-Wall Shielding
1-52	105	冷桢	-Successful development of the second Hot Helium Leak Test facility
1-53	105	周毅	Demountable sealing solution for ITER Shield Block hot helium leak test
1-54	105	李茹烟	Development of Tritium Dynamic Transport Analysis Tool
1-55	105	梁健伟	Progress of Code Development of System-safety Analysis for Fusion Reactor
1-56	105	廖洪彬	The research and fabrication of semi-prototype HCCB TBM
1-57	105	屈伸	Neutronics Effect Study of Homogeneous Model on Solid Breeder Bla nket
1-58	105	屈伸	Optimization study and multiple physics analyses of CFETR Helium-c ooled solid breeder blanket design
1-59	106	宋啸	Plasma initiation and preliminary magnetic control in the HL-2M tokamak
1-60	106	任磊磊	Planning and design of HL-2M EMC laboratory
1-61	106	杨宗谕	A more interpretable and compact disruption predictor based on deep learning in HL-2A
1-62	106	张鑫	Application Research of Integrated Modeling and Analysis Suit on HL-2M

1-63	106	孙腾飞	Edge Coherent Oscillation Providing Nearly Continuous Transport during ELM Mitigation by n = 1 RMP in HL-2A
1-64	106	陈翔	Preliminary design of ITER Langmuir probe measurement and control system
1-65	107	钱伟	The mechanism of periodic surface patterns induced by plasma exposure
1-66	107	王凡	Study on MHD Flow in Insulated Circular Pipe
1-67	107	王磊	Effects of inclined transversal magnetic fields on magnetohydrodynamic coupling ducts flow states in liquid metal blankets
1-68	107	徐丽莎	A preliminary study on the feasible design of bionic blanket concept
1-69	108	陈俊宏	Controllable pulse current source for TF coil of spherical Tokamak
1-70	108	范臻圆	Design and Simulation of High Voltage Power Supply in CFETR Ion Cyclotron Auxiliary Heating System
1-71	108	何金成	Simulation of an optimal power factor control algorithm based on vector control
1-72	108	李春林	Development of PSM high voltage power supply control system based on DSP & FPGA
1-73	108	廖超	Simulation research on quench protection circuit using hybrid DC circuit breaker
1-74	设计中心	陈哲	An overview of thick tungsten coating prepared by chemical vapor deposition and manufacture of relevant mockup
1-75	设计中心	朱运鹏	Electromagnetic and mechanical analysis of a toroidal field coil winding pack for a HTS tokamak device
1-76	设计中心	王硕	Modeling active control of resistive wall mode with power saturation and sensor noise on HL-2M

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	12:30 – 14:00 April 28, 2021					
2-1	101	王丰	Nonlinear interaction between magnetic island and ITG			
2-2	101	严一帆	The Influence of radial electric field and shear on direct loss of ion orbit			
2-3	101	刘灏	Development of a large diameter helicon plasma source and characteristics of helicon plasma in linear plasma device LEAD			
2-4	101	王卓	Advanced scenario simulation on HL-2M tokamak			

101	卢凌峰	Development of a new COMSOL based helicon wave simulation tool
101	陈逸航	Study of Electron Heat Flux – Gradient Hysteresis on HL-2A tokamak
101	周艺轩	Design of a Lyman-Alpha-Based BES for edge plasma density diagnosing on the HL-2A tokamak
101	袁金榜.	Observation of blobs using gas puff imaging diagnostic on the HL-2A tokamak
101	武婷婷	Effects of poloidal and parallel equilibrium flows on internal kink mode instability in tokamak plasmas
101	钟志航	Integrated simulation study of HL-2M discharge in high confinement mode with OMFIT
101	付文明	Numerical simulations of plasma and helium transport during He-SMBI induced detachment in HL-2A tokamak
101	刘林子	RMP effects on fast ion induced BAE in HL-2A tokamak
101	罗一鸣	Integrated simulation of plasma confinement performance of HL-2A tokamak
101	李春雨	Coil Phasing Optimalization of Toroidal Plasma Response based Resonant Magnetic Perturbation for HL-2M
101	邹云鹏	Experimental Validation of an Improved Critical Gradient Model and Alpha Particle Redistribution Prediction for CFETR Steady State Operation
101	王天博	New progress of tungsten impurity real-time monitoring method on HL-2A
101	李佳	Quasi-linear heat transport induced by ITG turbulence in the presence of impurities
101	李慧	Characteristics of particle transport due to TEM and ITG turbulence in tokamak plasmas
101	王元震	Construction and optimization of double transport barrier equilibria of HL-2M
102	魏凌峰	Instrument control related work on ITER
102	朱毅仁	Simulation study of edge localized modes mitigation with impurity injection in HL-2A
102	周航宇	Development of high-speed soft x-ray imaging diagnostic on HL-2A
102	张轶泼	Effects of LHCD and LBO on Runaway Electron Dynamics during Disruptions in the HL-2A Tokamak
102	佟瑞海	Design of cross-polarization scattering diagnostic on HL-2A
102	于利明	Experimental Evidence of Nonlinear Avalanche Dynamics of Energetic Particle Modes
102	李栋	Development of the Bayesian tomography method for the study of MHD instability and impurity transport
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			The effect of changed EvD flow on the black dynamics in the Covers Off
2-27	102	王威策	The effect of sheared ExB flow on the blob dynamics in the Scrape-Off Layer of HL-2A tokamak
2-28	102	吴娜	The mechanism research of double strike points of the divertor particle flux in HL-2A ECRH plasmas
2-29	102	苗祥淦	An extensive thermal diagnostics package for the determination of diverter heat flux footprints on HL-2A
2-30	102	何小斐	Measurement of Impurity Concentration by Combined Charge Exchange Recombination Spectra and Beam Emission Spectra in HL-2A
2-31	102	刘春华	Stray laser light simulation of Thomson scattering systems in the HL-2M tokamak
2-32	102	方凯锐	Dynamics of thermal turbulence during non-local transport in a gas-puffing experiment on HL-2A
2-33	102	翟文延	Image analysis technology is used to identify X points
2-34	102	杨曾辰	The plasma position measurement via microwave reflectometer
2-35	102	余鑫	Simulation of ECE diagnose measurement of Te profile from high and low field side
2-36	103	唐乐	Electromagnetic analysis of CFETR vaccum vessel and its ports during vertical displacement event
2-37	103	许婕	2020 HL-2M main machine engineering parameter measurement work report
2-38	103	李云峰	Research on the cooling performance of Hypervapotron structure for HL-2M
2-39	103	陈鑫	RAMI analysis of the helium refrigeration system of HL-2M tokamak
2-40	103	张龙	The Research on the EM behavior for NFM in ITER
2-41	103	钟云珂	The RAMI analysis of CPI-60 High-frequency Cryogenic Pellet Injection System
2-42	103	周军	Preliminary results of mass spectrometry measurements on HL-2M tokamak
2-43	104	王超	Preliminary study on the TE01 mode convertor and tapers for low-loss LHCD transmission line
2-44	104	杨印	Investigation on the wall conditioning of TOKAMAK
2-45	104	谷正阳	Characterisation of gas metering system with ITER relevant mass flow controller and pipe configuration
2-46	104	赵宇轩	I&C system design for characteriztion of ITER pipe line system
2-47	104	陈林	Briefly introduction of ITER Tokamak Assembly Contract(TAC1) 3D model&2D drawing processing - ChenLin
2-48	105	汪帅彧	Multi-physical field coupled magnetohydrodynamic analysis of charact eristic structure of liquid lead-lithium blanket

2-49	105	王俊	Development of System Code to Assess Implication of Physics and E ngineering Assumptions on the Design of a Demonstrai
2-50	105	王龙	Progress on compatibility between tritium permeation barrier and Li4S iO4 tritium breeder in SWIP
2-51	105	黄攀	The development of W/RAFM-steel diffusion bonding technologies for fusion reactor first wall in SWIP
2-52	105	王晓宇	Preliminary Safety Strategy and Safety Assessment for CFETR
2-53	105	王学芹	study on Ultrasonic Testing Technology of shield welding test module
2-54	105	吴晶	Altered design and finite element analysis of ITER EHF FW
2-55	105	李佳霖	Process research and development of insulating coatings of First Wall in ITER
2-56	105	张龙	Progress on the safety demonstration of China ITER Helium Coolant Ceramic Breeder Test Blanket
2-57	105	武兴华	Preliminary design and fabrication R&D of CN HCCB TBM
2-58	105	周冰	Accident classification and initial events for CFETR
2-59	106	崔步天	Design of Bias Electrode on HL-2A
2-60	106	王傲	Development of Metal Hall Detector in Magnetic Measurement
2-61	106	刘攀乐	Development Progress of HL-2M Distributed Timing System
2-62	106	张均钊	Development of magnetic probes on HL-2M
2-63	106	李宜轩	Real-time acquisition module based on Linux system
2-64	107	魏然	Sintering and testing of bulk nanocrystalline Tungsten
2-65	107	张归航	Exploration on the Fuse Method to Test the Irradiation Temperature
2-66	107	张志杰	A small specimen testing method to determine low cycle fatigue of metallic materials
2-67	107	赵栋烨	Investigation of boron distribution and material migration on the W7-X divertor by picosecond LIBS
2-68	107	赵耀	Magnetic field and velocity distribution in ferritic ducts under external strong magnetic fields
2-69	108	任青华	Design and simulation of reverse field pinch pulse power supply system
2-70	108	王海兵	The Research of Reactive Power Compensation and Harmonic Suppression of Pulse Generator Rectifier Power System

2-71	108	徐玉麟	Quench protection high power pulse power supply system
2-72	108	叶强	Design of HL-2M pulse motor generator excitation controller
2-73	108	张潇鹏	Preliminary study on current sharing of solid state switch in quench protection system
2-74	设计中心	王小勇	Assessment of the structural design criteria to prevent ratcheting damage for fusion component design
2-75	设计中心	周月	Heat flux and impurity compressing by deuterium gas puffing and pumping on HL-2M conventional diverter
2-76	设计中心	杜海龙	A new concept advanced divertor manipulating Ex B drift to improve Detachment for Both Bt directions on HL 2M
2-77	设计中心	封范	Mechanical property and microstructure of plastically deformed W-Y2O3 alloy
2-78	102	张凯	Vacuum ultraviolet spectroscopy for impurity measurement during the initial discharge stage in HL-2M tokamak