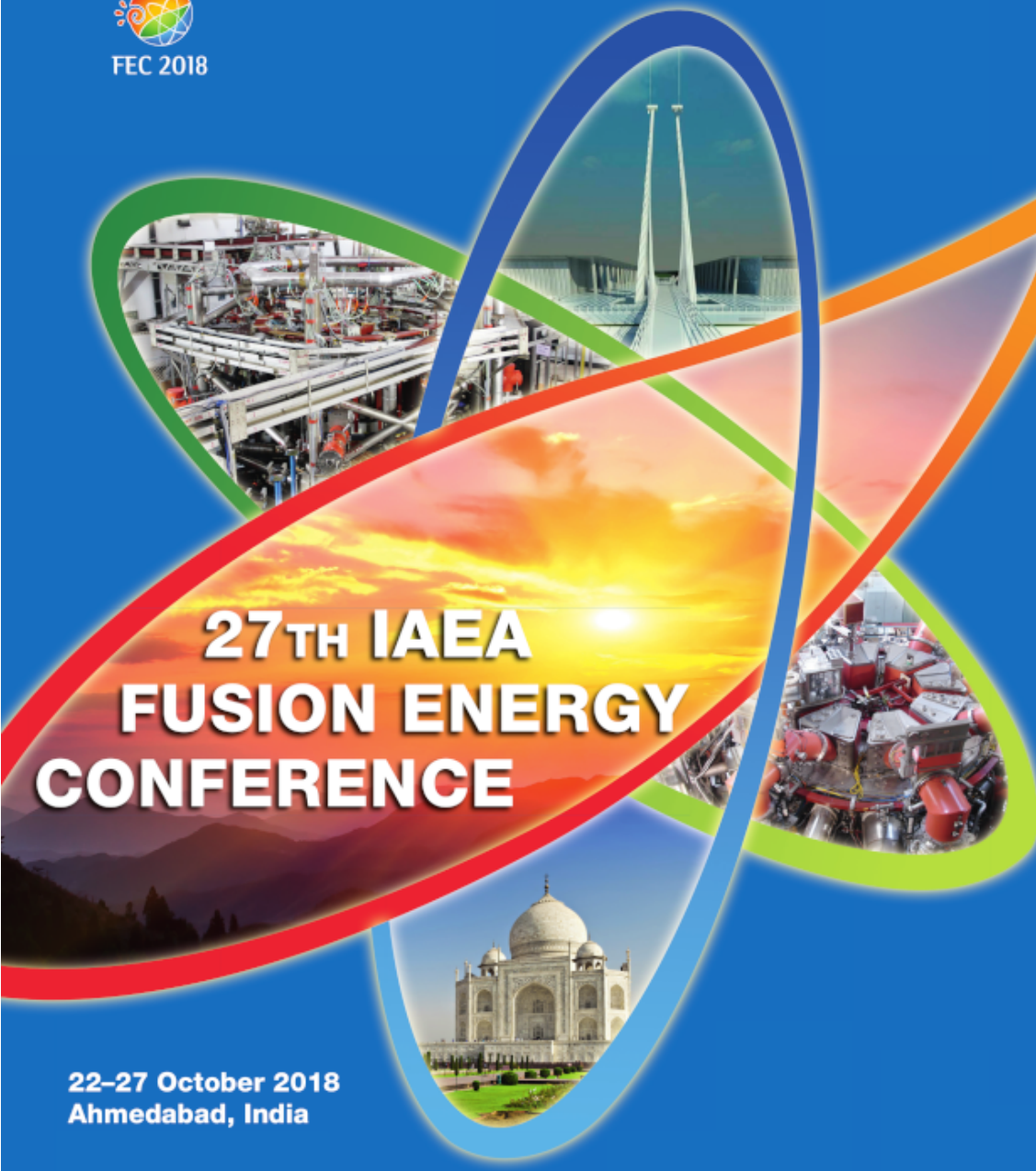
FEC 2018



27TH IAEA FUSION ENERGY CONFERENCE

22–27 October 2018
Ahmedabad, India

Programme

Organized by the

IAEA
International Atomic Energy Agency

Hosted by the Government of India
through the

Institute for Plasma Research

GN-258
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Organized by the:

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Hosted by the Government of India through the
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27th IAEA

Fusion Energy Conference

22–27 October 2018 Ahmedabad, India

Programme

Version: October 16, 2018, web enabled

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For iPhone or iPad users, get your free download through the Apple iTunes Store; those with Android devices can visit the Google Play Store.

Once installed and running, search and download the FEC–2018 conference. The application provides a digital, mobile copy of the conference agenda and timetables, venue information, social network updates, and more.

Colophon

This book has been assembled from the abstract sources submitted by the contributing authors via the Indico conference management platform. Layout, editing, and typesetting of the book, including customized TEX & LATEX macros, was done by Paul Knowles, LogrusData, Toronto, Canada. The font is TeX Gyre Pagella, a decendent of Hermann Zapf's Palatino.

Introduction

The International Atomic Energy Agency (IAEA) fosters the exchange of scientific and technical results in nuclear fusion research and development through its series of Fusion Energy Conferences. The 27th IAEA Fusion Energy Conference (FEC 2018) aims to provide a forum for the discussion of key physics and technology issues as well as innovative concepts of direct relevance to the use of nuclear fusion as a source of energy.

With a number of next-step fusion devices currently being implemented —such as the International Thermonuclear Experimental Reactor (ITER) in Cadarache, France, and the Wendelstein 7-X stellarator in Greifswald, Germany— and in view of the concomitant need to demonstrate the technological feasibility of fusion power plants as well as the economic viability of this method of energy production, the fusion community is now facing new challenges. The way these challenges are addressed will dictate research orientations in the present and coming decades.

The scientific scope of FEC 2018 is, therefore, intended to reflect the priorities of this new era in fusion energy research. The conference aims to serve as a platform for sharing the results of research and development efforts in both national and international fusion experiments that have been shaped by these new priorities, and to thereby help in pinpointing worldwide advances in fusion theory, experiments, technology, engineering, safety and socio-economics. Furthermore, the conference will also set these results against the backdrop of the requirements for a net energy producing fusion device and a fusion power plant in general, and will thus help in defining the way forward.

With the participation of international organizations such as the ITER Organization and the European Atomic Energy Community (Euratom), as well as the collaboration of more than forty countries and several research institutes, including those working on smaller plasma devices, it is expected that this conference will, as in the past, serve to identify possibilities and means for continuous and effective international collaboration in this area.

The 27th IAEA Fusion Energy Conference is being organized by the IAEA in cooperation with Department of Atomic Energy, Government of India and the Institute for Plasma Research at the Mahatma Mandir, Gandhinagar (Ahmedabad) Gujarat, India. Previous conferences in this series were held in Salzburg (1961), Culham (1965), Novosibirsk (1968), Madison (1971), Tokyo (1974), Berchtesgaden (1976), Innsbruck (1978), Brussels (1980), Baltimore (1982), London (1984), Kyoto (1986), Nice (1988), Washington DC (1990), Würzburg (1992), Seville (1994), Montreal (1996), Yokohama (1998), Sorrento (2000), Lyon (2002), Vilamoura (2004), Chengdu (2006), Geneva (2008), Daejeon (2010), San Diego (2012), St. Petersburg (2014), and Kyoto (2016).

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Conference Material

Contributed papers will be published electronically on the IAEA Fusion Portal under the FEC dedicated webpage as a part of the FEC material.

International Nuclear Information System (INIS)

Contributed papers will be published electronically in the INIS repository (IAEA-CN–258).

Nuclear Fusion Journal

Participants have been invited to submit their paper for possible publication in the IAEA journal, Nuclear Fusion. If your institution does not have access to the journal, pdfs of these FEC derived articles can be requested from nf@iaea.org.

Participation in an IAEA Scientific Meeting

Governments of Member States and those organizations whose activities are relevant to the meeting subject matter are invited to designate participants in the IAEA scientific conferences and symposia. In addition, the IAEA itself may invite a limited number of scientists as invited speakers. Only participants designated or invited in this way are entitled to present papers and take part in the discussions.

Representatives of the press, radio, television or other information media and members of the public, the latter as "observers", may also be authorized to attend, but without the right to take part in the proceedings.

Scientists interested in participating in any of the IAEA meetings should request information from the Government authorities of their own countries, in most cases the Ministry of Foreign Affairs or national atomic energy authority.

Working Language & Resolutions

Working Language: English. No simultaneous translation will be provided.

Resolutions: No resolutions may be submitted for consideration on any subject; no votes will be taken.

Satellite Meetings

Satellite meetings can be held. Meeting rooms and times can be reserved via the conference website.

Information for Participants

The conference website contains links to many helpful guides. Notably, the Indico conference system is used for all correspondence concerning contributions.

Overview of Contributions (as of October 16, 2018)

4	Keynote presentations
24	Overview talks with posters
78	Regular talks
17	Rapporteured papers
11	Overview poster presentations
518	Regular poster presentations
—	Post deadline talks
—	Post deadline poster presentations
5	Summary talks

Overview posters will be exhibited during the entire conference. All oral presentations will also be displayed as posters according to the programme.

The duration of oral presentations indicated in the programme already includes discussion time. Speakers are requested to make available the following times for discussions:

4′ for overview presentation (total 25′)
3′ for regular oral presentation (total 20′)

Rapporteur papers are identified by the letter "a" after the paper number. Rapporteured papers are identified by the letters "b" or "c" after the paper number.

Explanation of Abbreviations

O	Opening
S	Summary
OV	Overviews
OVP	Overview Posters
EX	Magnetic Confinement Experiments
TH	Magnetic Confinement Theory and Modelling
	For both **EX** and **TH**, subdivisions are:
	C: *Confinement*
	D: *Plasma–material interactions; divertors; limiters; scrape-off layer (SOL)*
	S: *Stability*
	W: *Wave–plasma interactions; current drive; heating; energetic particles*
FIP	Fusion Engineering, Integration and Power Plant Design
FNS	Fusion Nuclear Physics and Technology
ICC	Innovative Confinement Concepts
IFE	Inertial Fusion Experiments and Theory
MPT	Materials Physics and Technology
PD	Post-Deadline Contributions
PPC	Plasma Overall Performance and Control
SEE	Safety, Environmental and Economic Aspects of Fusion

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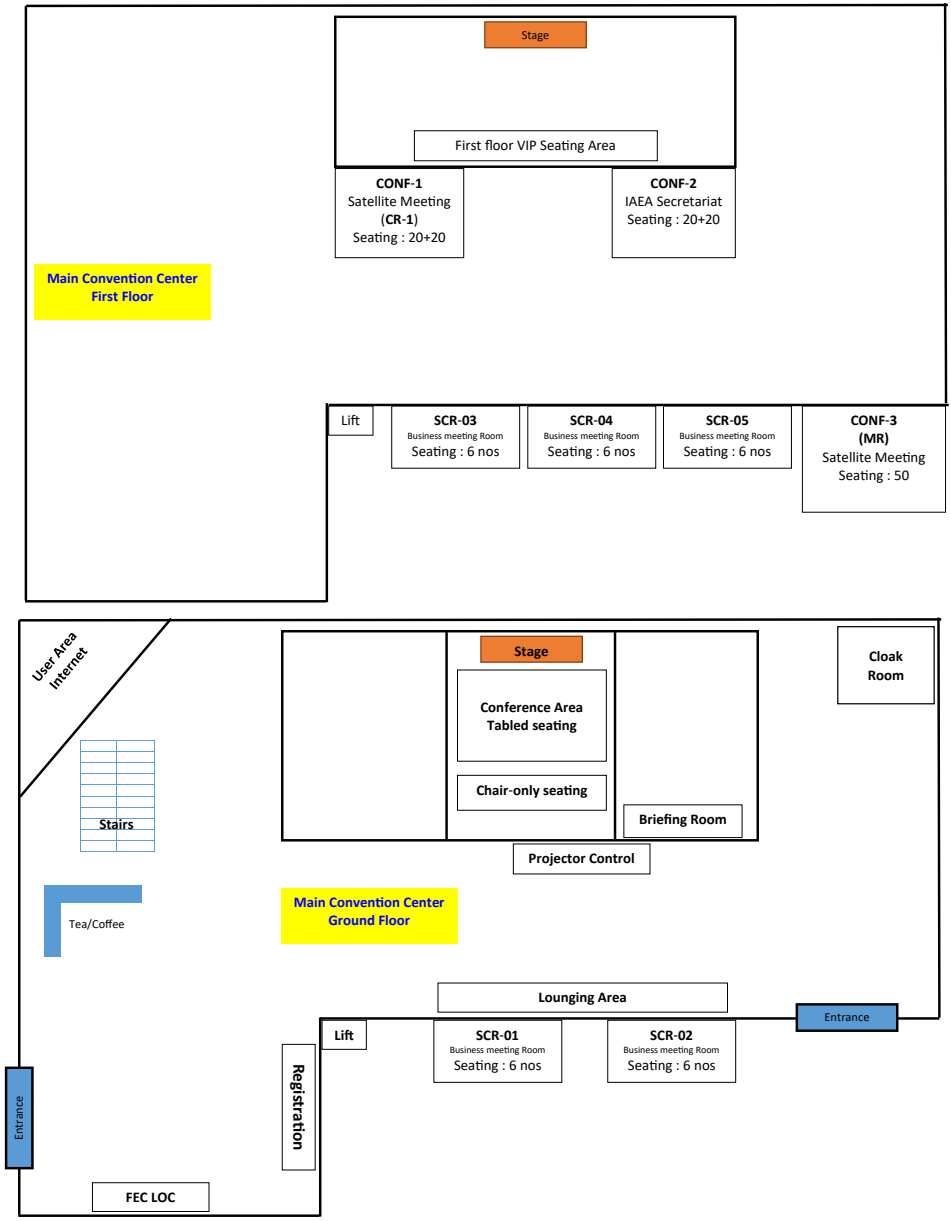

Day / Date	Monday Oct. 22, 2018		Tuesday Oct. 23, 2018		Wednesday Oct. 24, 2018		Thursday Oct. 25, 2018		Friday Oct. 26, 2018		Saturday Oct. 27, 2018
08:30 — 10:15	*O/1* Opening —&— Keynote p. 10		*OV/3* Overview: Magnetic Fusion p. 14	*P1* Posters p. 15	*IFE/1* Inertial Fusion p. 26	*P3* Posters p. 27	*EX/5, PPC/1, TH/3* Integrated Modelling & Transport p. 38	*P5* Posters p. 39	*EX/7–TH/5* Active ELM Control p. 49	*P7* Posters p. 50	*EX/10–TH/8* Transport p. 65
Coffee Break: 10:15 — 10:45											
10:45 — 12:30	*OV/1* Overview: Magnetic Fusion p. 10		*EX/1–TH/1* Energetic Particles p. 14	*P1* Posters p. 15	*EX/2* Pedestal & ELM Optimization p. 26	*P3* Posters p. 27	*EX/6–TH/4* Runaways & Disruption Mitigation p. 38	*P5* Posters p. 39	*MPT/2, FNS/1, SEE/2* Materials, Fusion Nuclear Science, Environmental p. 49	*P7* Posters p. 50	*EX/11, SEE/3, PD* Stability, Environmental & PD p. 65
Lunch: 12:30 — 14:00											
14:00 — 16:10	*OV/2* Overview: Magnetic Fusion p. 10	*OVP* Posters p. 12	*OV/4* Overview: Magnetic Fusion p. 21	*P2* Posters p. 22	*EX/3* Plasma Performance & Control p. 33	*P4* Posters p. 34	*FIP/2, MPT/1, SEE/1* In Vessel Components & Plasma Interface p. 42	*P6* Posters p. 43	*EX/8, PPC/2, TH/6* Heating, Current Drive & Steady State p. 57	*P8* Posters p. 58	*S/1* Summary (14:00 – 16:00) p. 66
Coffee Break: 16:10 — 16:40											
16:40 — 18:45	*FIP/1* ITER Technology p. 11	*OVP* Posters p. 12	*OV/5* Overview: Magnetic Fusion p. 21	*P2* Posters p. 22	*EX/4–TH/2* H-Mode & Pedestal p. 33	*P4* Posters p. 34	*FIP/3* DEMO & Advance Technology p. 43	*P6* Posters p. 43	*EX/9–TH/7* Divertor & Exhaust Physics p. 57	*P8* Posters p. 58	*S/2* Summary (16:30 – 18:00) p. 66
19:30 — 22:00	Reception		Nuclear Fusion Board Meeting		Banquet						

08:00 – 16:00: **Conference Registration**

O/1 Opening Plenary

Chair: Shashank Chaturvedi (India) *Main Hall* **(08:30 – 10:15)**

Time	Id	Presenter		Title
08:30	O/1-1		India	Traditional Lighting of the Lamp
08:35	O/1-2	M. Venkatesh	IAEA	Opening Address
08:45	O/1-3	Host Country Representative	India	Welcome Address
09:00	O/1-4	R. B. Grover	India	Importance of Energy and the Role of Nuclear Energy in India's Energy Mix
09:15	O/1-5	S. P. Deshpande	India	India's Quest for Fusion Energy & Road to ITER
09:30	O/1-6	P. A. Child	EC	EU R&D Energy Policy and the Role of Fusion Research
09:50	O/1-7	N. K. Prinja	UK	Fusion is our Future: Readiness of the Fusion Technology and the 4th Industrial Revolution

OV/1 Overviews 1: Magnetic Fusion

Chair: Sen Abhijit (India) *Main Hall* **(10:45 – 12:30)**

Time	Id	Presenter		Title
10:45	OV/1-1	A. K. Chakraborty	India	Progress of ITER-India Activities for ITER Deliverables: Challenges and Mitigation Measures
11:10	OV/1-2	B. Bigot	ITER	Progress Toward ITER's First Plasma
11:35	OV/1-3	E. Joffrin	France	Overview of the JET Preparation for Deuterium-Tritium Operation
12:00	OV/1-4	C. C. Petty	USA	DIII-D Research Towards Establishing the Scientific Basis for Future Fusion Reactors

OV/2 Overviews 2: Magnetic Fusion

Chair: Yasuhiko Takeiri (Japan) *Main Hall* **(14:00 – 16:10)**

Time	Id	Presenter		Title
14:00	OV/2-1	H. Meyer	UK	Overview of Physics Studies on ASDEX-Upgrade
14:25	OV/2-2	B. N. Wan	China, P. R.	Recent Advances in EAST Physics Experiments in Support of Steady-State Operation for ITER and CFETR

Continued…

OV/2 *continued…*

Time	Id	Presenter		Title
14:50	OV/2-3	H. K. Park	Korea, Rep. of	Overview of the KSTAR Research Progress and Future Plan Toward ITER and K-DEMO
15:15	OV/2-4	E. S. Marmar	USA	Overview of Research Results from the Alcator C-Mod Tokamak
15:40	OV/2-5	J. L. Kline	USA	Progress of Indirect Drive Inertial Confinement Fusion in the USA

FIP/1 Fusion Engineering, Integration and Power Plant Design: ITER Technology

Chair: Rajesh Maingi (USA) *Main Hall* **(16:40 – 18:45)**

Time	Id	Presenter		Title
16:40	FIP/1-1	M. Nakahira	Japan	Completion of the First TF Coil Structure of ITER
17:00	FIP/1-2Ra	Y. Oda	Japan	Completion of 1st ITER Gyrotron Manufacturing and 1 MW Test Result
	FIP/1-2Rb			Outcome of R&D Programme for ITER ICRF Power Source System
	FIP/1-2Rc			Recent Progress in the Development of the European 1 MW, 170 GHz CW Gyrotron for ITER
17:20	FIP/1-3Ra	J. Joshi	India	Technologies for Realization of Large Size RF Sources for −ve Neutral Beam Systems for ITER: Challenges, Experience and Path Ahead
	FIP/1-3Rb			Progress in the ITER Neutral Beam Test Facility
	FIP/1-3Rc			Demonstration of 1 MV Vacuum Insulation for the Vacuum Insulated Beam Source in the ITER NB System
17:40	FIP/1-4	A. Litnovsky	Germany	Diagnostic Mirrors for ITER: Research in a Frame of International Tokamak Physics Activity
18:00	FIP/1-5	E. E. Mukhin	Russian Fed.	Integration of Thomson Scattering and Laser-Induced Fluorescence in ITER Divertor: Engineering and Performance Analysis
18:20	FIP/1-6	X. Wang	China, P. R.	Current Design and R&D Progress of CN HCCB TBS

OVP Overview Posters

Main Hall **(14:00 – 18:45)**

Id	Presenter		Title
OV/1-1	A. K. Chakraborty	India	Progress of ITER-India Activities for ITER Deliverables: Challenges and Mitigation Measures
OV/1-2	B. Bigot	ITER	Progress Toward ITER's First Plasma
OV/1-3	E. Joffrin	France	Overview of the JET Preparation for Deuterium-Tritium Operation
OV/1-4	C. C. Petty	USA	DIII-D Research Towards Establishing the Scientific Basis for Future Fusion Reactors
OV/2-1	H. Meyer	UK	Overview of Physics Studies on ASDEX-Upgrade
OV/2-2	B. N. Wan	China, P. R.	Recent Advances in EAST Physics Experiments in Support of Steady-State Operation for ITER and CFETR
OV/2-3	H. K. Park	Korea, Rep. of	Overview of the KSTAR Research Progress and Future Plan Toward ITER and K-DEMO
OV/2-4	E. S. Marmar	USA	Overview of Research Results from the Alcator C-Mod Tokamak
OV/2-5	J. L. Kline	USA	Progress of Indirect Drive Inertial Confinement Fusion in the USA
OV/3-1	P. Barabaschi	F4E	Progress of JT-60SA Project
OV/3-2	G. Zhuang	China, P. R.	Progress of the CFETR Design
OV/3-3	M. Sugimoto	Japan	Overview of the Validation Activities of IFMIF/EVEDA: LIPAc, the Linear IFMIF Prototype Accelerator and LiFus6, the Lithium Corrosion Induced Facility
OV/3-4	H. Tanigawa	Japan	The Strategy of Fusion DEMO In-Vessel Structural Material Development
OV/4-1	T. Klinger	Germany	Overview of First Wendelstein 7-X High-Performance Operation with Island Divertor
OV/4-2	T. Morisaki	Japan	Overview of the First Deuterium Experiment in LHD
OV/4-3	E. Ascasíbar	Spain	Overview of TJ-II Stellarator Results
OV/4-4	S. Pamela	UK	ELM and ELM-control Simulations
OV/4-5	E. J. Strait	USA	Experiments in Disruption Avoidance for ITER Using Passive and Active Control
OV/5-1	M. Xu	China, P. R.	Overview of HL-2A Recent Experiments
OV/5-2	S. Coda	Switzerland	Physics Research on the TCV Tokamak Facility: From Conventional to Alternative Scenarios and Beyond

Continued…

OVP *continued…*

Id	Presenter		Title
OV/5-3	R. L. Tanna	India	Overview of Operation and Experiments in the ADITYA-U Tokamak
OV/5-4	N. N. Bakharev	Russian Fed.	Tokamak Research in Ioffe Institute
OV/5-5Ra	J. E. Menard	USA	NSTX-U Theory and Modelling Results
OV/5-5Rb	J. R. Harrison	UK	Overview of New MAST Physics in Anticipation of First Results from MAST Upgrade
OV/P-1	G. Pucella	Italy	Overview of the FTU Results
OV/P-2	B. P. Radha	USA	Overview and Status of Direct-Drive Inertial Confinement Fusion in the United States
OV/P-3	M. Komm	Czech Republic	ITER-Relevant Research on the COMPASS Tokamak
OV/P-4	T. A. Carter	USA	Advances in Fusion-Relevant Physics on the Large Plasma Device
OV/P-5	N. C. Wang	China, P. R.	Overview of the Recent Experimental Research on the J-TEXT Tokamak
OV/P-6	J. E. Menard	USA	Fusion Energy Development Applications Utilizing the Spherical Tokamak and Associated Research Needs and Tools
OV/P-7	M. Kakati	India	Design, Development and Recent Experiments at the CIMPLE-PSI Device
OV/P-8	W. Liu	China, P. R.	Overview of Diagnostics Upgrade and Experiment Progress on KTX
OV/P-11	H. Gota	USA	Formation of Hot, Stable, Long-Lived Field-Reversed Configuration Plasmas on the C-2W Device
OV/P-12	S. M. Belsare	India	Activity of Indian High Heat Flux Test Facility

19:30 – 22:00: **Welcome Reception**

OV/3 Overviews 3: Magnetic Fusion

Chair: Liu Yong (P. R. China) *Main Hall* **(08:30 – 10:15)**

Time	Id	Presenter		Title
08:30	OV/3-1	P. Barabaschi	F4E	Progress of JT-60SA Project
08:55	OV/3-2	G. Zhuang	China, P. R.	Progress of the CFETR Design
09:20	OV/3-3	M. Sugimoto	Japan	Overview of the Validation Activities of IFMIF/EVEDA: LIPAc, the Linear IFMIF Prototype Accelerator and LiFus6, the Lithium Corrosion Induced Facility
09:45	OV/3-4	H. Tanigawa	Japan	The Strategy of Fusion DEMO In-Vessel Structural Material Development

EX/1 and TH/1 Energetic Particles

Chair: Simon Pinches (ITER) *Main Hall* **(10:45 – 12:30)**

Time	Id	Presenter		Title
10:45	EX/1-1	P. Lauber	Germany	Strongly Nonlinear Energetic Particle Dynamics in ASDEX-Upgrade Scenarios with Core Impurity Accumulation
11:05	TH/1-1	W. Shen	China, P. R.	Simulations of Energetic Particle Driven Instabilities and Fast Particle Redistribution in EAST Tokamak
11:25	EX/1-2	M. Podestà	USA	Reduced Energetic Particle Transport Models Enable Comprehensive Time-Dependent Tokamak Simulations
11:45	TH/1-2	Y. Todo	Japan	Critical Fast Ion Distribution in Phase Space for the Synchronized Sudden Growth of Multiple Alfvén Eigenmodes and the Global Transport of Fast Ions
12:05	EX/1-3Ra	S. Yamamoto	Japan	Impact of ECH/ECCD on Fast-Ion-Driven MHD Instabilities in Helical Plasmas
	EX/1-3Rb			Excitation Mechanism of the Energetic Particle Driven Resistive Interchange Mode and Strategy to Control the Mode in Large Helical Device

P1 Posters 1

Main Hall **(08:30 – 12:30)**

Id	Presenter		Title
FIP/1-1	M. Nakahira	Japan	Completion of the First TF Coil Structure of ITER
FIP/1-2Ra	Y. Oda	Japan	Completion of 1st ITER Gyrotron Manufacturing and 1 MW Test Result
FIP/1-2Rb	R. G. Trivedi	India	Outcome of R&D Programme for ITER ICRF Power Source System
FIP/1-2Rc	G. Gantenbein	Germany	Recent Progress in the Development of the European 1 MW, 170 GHz CW Gyrotron for ITER
FIP/1-3Ra	J. Joshi	India	Technologies for Realization of Large Size RF Sources for −ve Neutral Beam Systems for ITER: Challenges, Experience and Path Ahead
FIP/1-3Rb	V. Toigo	Italy	Progress in the ITER Neutral Beam Test Facility
FIP/1-3Rc	A. Kojima	Japan	Demonstration of 1 MV Vacuum Insulation for the Vacuum Insulated Beam Source in the ITER NB System
FIP/1-4	A. Litnovsky	Germany	Diagnostic Mirrors for ITER: Research in a Frame of International Tokamak Physics Activity
FIP/1-5	E. E. Mukhin	Russian Fed.	Integration of Thomson Scattering and Laser-Induced Fluorescence in ITER Divertor: Engineering and Performance Analysis
FIP/1-6	X. Wang	China, P. R.	Current Design and R&D Progress of CN HCCB TBS
EX/P1-1	M. Komm	Czech Republic	Divertor Impurity Seeding Experiments at the COMPASS Tokamak
EX/P1-2	M. J. Hole	Portugal	Experimental Studies of Pressure and Plasma Current Profiles for Equilibria Calculations During AC Transition in the ISTTOK Tokamak
EX/P1-3	D. Frigione	Italy	Impact of Neon Injection on Electron Density Peaking in JET Hybrid Plasmas
EX/P1-4	H. Weisen	Switzerland	Isotope Dependence of Confinement in JET Deuterium and Hydrogen Plasmas
EX/P1-5	H.-T. Kim	UK	High Fusion Performance at High T_i/T_e in JET-ILW Baseline Plasmas with High NBI Heating Power and Low Gas Puffing

Continued…

P1 *continued…*

Id	Presenter		Title
EX/P1-6	B. P. Duval	Switzerland	Singlet Breakdown Optimization to a Doublet Plasma Configuration on the TCV Tokamak
EX/P1-9	T. Estrada	Spain	Turbulence and Radial Electric Field Asymmetries Measured at TJ-II Plasmas
EX/P1-11	E. Sánchez	Spain	Validation of Global Gyrokinetic Simulations in Stellarator Configurations
EX/P1-12	A. Vertkov	Russian Fed.	The Concept of Lithium Based Plasma Facing Elements for Steady State Fusion Tokamak-Reactor and its Experimental Validation
EX/P1-14	D. Borodin	Germany	Extrapolation of Be Erosion Modelling from JET and PISCES-B to ITER
EX/P1-15	M. Mayer	Germany	Erosion and Deposition in the JET Divertor During the ITER-Like Wall Campaigns
EX/P1-16	G. De Tommasi	Italy	The Impact of Poloidal Flux Expansion on JET Divertor Radiation Performance
EX/P1-17	S. Jachmich	Sweden	First Mirror Test in JET for ITER: Complete Overview After Three Campaigns in JET with ITER-Like Wall
EX/P1-18	I. E. Garkusha	Ukraine	Influence of Magnetic Field on Plasma Energy Transfer to Material Surfaces in ELM Simulation Experiments with QSPA-M
EX/P1-19	C. Theiler	Switzerland	SOL Transport and Detachment in Alternative Divertor Configurations in TCV L- and H-Mode Plasmas
EX/P1-20	C. Hidalgo	Spain	On the Role of Radial Electric Fields on Turbulence Spreading in the Plasma Boundary of Fusion Devices
EX/P1-21	I. Furno	Switzerland	Basic Studies of the Interaction of Blobs with Suprathermal Ions and Millimetre-Wave Beams in the TORPEX Device
EX/P1-22	C. Sozzi	Italy	Early Identification of Disruption Paths for Prevention and Avoidance
EX/P1-23	S. Jachmich	Germany	Minimizing Power Load Asymmetries During Disruption Mitigation at JET
EX/P1-24	S. N. Gerasimov	UK	Overview of Disruptions with JET-ILW
EX/P1-25	M. Kong	Switzerland	Control of NTMs and Integrated Multiactuator Control on TCV
EX/P1-26	O. Ficker	Czech Republic	Runaway Electron Beam Stability and Decay in COMPASS
EX/P1-28	S. E. Sharapov	UK	Plasma and Diagnostics Preparation for α-Particle Studies in JET DT

Continued…

P1 *continued…*

Id	Presenter		Title
EX/P1-29	C. C. Klepper	USA	Subdivertor Fuel Isotopic Content Detection Limit for JET and Impact on the Control of ICRH for JET-ILW and JET-DT Operation
EX/P1-30	C. Piron	Italy	Extension of the Operating Space of High-β_N Fully Noninductive Scenarios on TCV Using Neutral Beam Injection
EX/P1-31	V. Huber	Germany	The Software and Hardware Architecture of the Real-Time Protection of In-Vessel Components in JET-ILW
TH/P1-1	M. Drevlak	Germany	New Results in Stellarator Optimization
TH/P1-2	N. Kasuya	Japan	Numerical Diagnostic to Investigate Poloidal Asymmetry in Three-Dimensional Magnetic Configurations
TH/P1-3	S. Satake	Japan	Effect of Magnetic Shear and the Finite Banana-Orbit Width on the Neoclassical Toroidal Viscosity in Perturbed Tokamaks
TH/P1-4	L. E. Sugiyama	USA	Steady States for Nonaxisymmetric Rotating Toroidal Plasmas
TH/P1-5	F. Schluck	Germany	Plasma-Surface Related 3D Modelling Results for Wendelstein 7-X and EAST
TH/P1-6	D. Schwörer	Germany	Influence of Neutral-Plasma Interactions on 3D Scrape-Off Layer Filaments
TH/P1-7	L. Li	China, P. R.	Comparative Modelling of Plasma Boundary Corrugation due to the Application of 3D Fields with ELM Control Coils in Various ITER Scenarios
TH/P1-8	B. C. Lyons	USA	Predict-First Analysis and Experimental Validation of MHD Equilibrium, Stability, and Plasma Response to 3D Magnetic Perturbations
FIP/P1-1	L. R. Baylor	USA	Shattered Pellet Injection Technology Design and Characterization for Disruption Mitigation Experiments
FIP/P1-2	S. Simrock	ITER	Automated Testing of ITER Diagnostics Scientific Instrumentation
FIP/P1-3	Z. Wang	USA	Hollow Pellets for Magnetic Fusion
FIP/P1-4	J. Smith	USA	Recent Progress on the Production and Testing of the ITER Central Solenoid Modules
FIP/P1-5	A. G. Razdobarin	Russian Fed.	Dielectric Windows as Front-End Diagnostic Elements in ITER
FIP/P1-7	M. Tanaka	Japan	Exhaust Behaviour and Mass Balance of Tritium in Large Helical Device

Continued…

P1 *continued…*

Id	Presenter		Title
FIP/P1-8	T. Kobayashi	Japan	Progress in Development and Fabrication of the JT-60SA ECH/CD System
FIP/P1-9	A. K. Verma	India	Preliminary Pipe Stress Analysis of High Pressure, High Temperature Experimental Helium Cooling System
FIP/P1-10	H. Tobari	Japan	Completion of DC 1 MV Power Supply System for ITER Neutral Beam Test Facility
FIP/P1-11	K. Kajiwara	Japan	Improvement of ITER Equatorial EC Launcher Design for Poloidal Steering Compatibility
FIP/P1-12	A. Y. Dnestrovsky	Russian Fed.	Integrated Modelling of Core and Divertor Plasmas for DEMO-FNS Hybrid Facility
FIP/P1-13	A. Kasugai	Japan	RFQ Commissioning of Linear IFMIF Prototype Accelerator (LIPAc)
FIP/P1-14	R. Imazawa	Japan	Development of the Far-Infrared Laser Polarimetry for Current Profile Measurement on ITER
FIP/P1-15	D. L. Brower	USA	Overview of ITPA R&D Activities in Support of ITER Diagnostics
FIP/P1-16	S. Clement-Lorenzo	F4E	Verification Tests for Remote Participation at ITER REC
FIP/P1-17	E. Gaio	Italy	Consorzio RFX Contribution to the JT-60SA Project in the Frame of the Broader Approach Agreement
FIP/P1-18	T. Schwarz-Selinger	Germany	The Influence of Displacement Damage and Helium on Deuterium Transport and Retention in Tungsten
FIP/P1-19	N. Bairagi	India	Experimental Measurements of Cryogenic Heat Loads on SST-1 Helium Cryogenic Plant
FIP/P1-20	R. Bright	India	Thermo-Mechanical Experiments On Lithium Titanate Pebble Bed
FIP/P1-21	K. Patel	India	The Operation, Control, Data Acquisition System of ASDEX Pressure Gauge for Neutral Pressure
FIP/P1-22	E. A. Tolman	USA	Conceptual Design Study for Heat Exhaust Management in the ARC Fusion Pilot Plant
FIP/P1-24	P. Chaudhuri	India	Progress on Lithium Ceramic Breeder Materials Development, Characterization and R&D Activities in IPR
FIP/P1-25	R. Sugandhi	India	Machine Control System for Large Volume Plasma Device: Current Status and Future Directions

Continued…

P1 *continued…*

Id	Presenter		Title
FIP/P1-26	V. N. Muvvala	India	Application of Finite Element Techniques in Simulation of Mechanical Design and Performance Assessment of Different Components of a Neutral Beam Systems
FIP/P1-27	I. Kodeli	Slovenia	TRIGA Integral Activation of Mn Foils, Li_2O and LiF as Potential Tritium Production Monitors for Fusion Applications
FIP/P1-28	R. Anand	India	Seismic Analysis of High Power Amplifier in ITER ICRF Range
FIP/P1-29	P. V. Subhash	India	ACTYS Code System: Towards Next Generation Nuclear Activation Codes for Fusion Reactors
FIP/P1-31	A. K. Tyagi	India	Deuterium Depth Profile Measurement in Pre- and Postirradiated Tungsten
FIP/P1-32	R. Kumar	India	Development of a High-Temperature Blackbody Source for ITER ECE Diagnostic
FIP/P1-33	G. L. Vyas	India	Alignment and Calibration Schemes for ITER CXRS-Pedestal Diagnostic
FIP/P1-34	S. Varshney	India	Thermal Analysis of Protection Important Components of ITER XRCS-Survey Diagnostic System
FIP/P1-35	S. Jha	India	Preliminary Design of IN-DA Diagnostic Plant Instrumentation & Control
FIP/P1-36	S. Kumar	India	Design Validation of ITER XRCS Survey Spectrometer with Nuclear Code RCC-MR
FIP/P1-37	M. Manuelraj	India	In-Vessel Inspection System: Design Progress of High Vacuum and Temperature Compatible Remote Handling for Fusion Purposes
FIP/P1-38	L. Cai	China, P. R.	Preliminary Development on a Conceptual First Wall for DEMO
FIP/P1-39	N. P. Singh	India	Installation and Initial Run of 96 kV 7.2 MW Acceleration Grid Power Supplies
FIP/P1-40	M. J. Singh	India	R&D Status of Indian Test Facility for ITER DNB Characterization
FIP/P1-41	H. Tyagi	India	Design and Development of Safety Control System of Indian Test Facility (IN-TF) for ITER DNB
FIP/P1-42	A. Maheshwari	India	Study of Corrosion Properties ITER In-Wall Shield (IWS) Fasteners and Structural Integrity of IWS

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P1 *continued…*

Id	Presenter		Title
FIP/P1-43	D. Aggarwal	India	Nuclear Performance Analysis and Optimization Study of Indian Solid Breeder Blanket for DEMO
FIP/P1-44	K. K. Gotewal	India	Design and Development of the Articulated Robotic Inspection Arm (ARIA) for Fusion Machine
FIP/P1-45	K. M. Patel	India	Baking System of ADITYA Upgrade Tokamak
FIP/P1-46	S. Muralidhara	India	Dynamic Simulation of Loss of Insulation Vacuum Event for ITER Cryodistribution System
FIP/P1-47	P. Dutta	India	Visual Servo of Tokamak Relevant Remote Handling Systems Using Neural Network Architecture
FIP/P1-50	S. V. Rogozhkin	Russian Fed.	The Influence of Fe-Ion Irradiation on the Microstructure of Reduced Activation Ferritic-Martensitic Steel Eurofer 97
FIP/P1-51	J. E. Menard	USA	Electromagnetic Particle Injector (EPI) as a Fast Time Response Disruption Mitigation Concept
FIP/P1-52	H. B. Pandya	India	Preliminary Results of Prototype Martin–Puplett Interferometer and Transmission Line Developed for ITER ECE Diagnostic
FIP/P1-53	J. Rapp	USA	Performance of the Plasma Source and Heating Concept for the Prototype-Material Plasma Exposure Experiment (Proto-MPEX)
FIP/P1-54	K. Ikeda	Japan	Exploring Deuterium Beam Operation and Behaviour of Coextracted Electron in Negative-Ion-Based Neutral Beam Injector
FIP/P1-55	D. Sharma	India	Thermal-Hydraulics and Structural Analyses of LLCB TBM Set
FIP/P1-56	T. Kariya	Japan	Development of High Power Gyrotrons for Advanced Fusion Devices and DEMO
FIP/P1-57	R. N. Panchal	India	Performance Evaluation of 1.3 kW at 4.5 K Helium Refrigerator/Liquefier (HRL) at IPR
FIP/P1-58	G. Vadolia	India	Survey on Hot Isostatic Pressing Technique for Development of Tokamak Components
FIP/P1-59	A. D. Mankani	India	Design and Development of 500 kV, 100 mA DC High Voltage Power Supply for Particle Accelerators at IPR

OV/4 Overviews 4: Magnetic Fusion

Chair: Michael Zarnstorff (USA) *Main Hall* **(14:00 – 16:10)**

Time	Id	Presenter		Title
14:00	OV/4-1	T. Klinger	Germany	Overview of First Wendelstein 7-X High-Performance Operation with Island Divertor
14:25	OV/4-2	T. Morisaki	Japan	Overview of the First Deuterium Experiment in LHD
14:50	OV/4-3	E. Ascasíbar	Spain	Overview of TJ-II Stellarator Results
15:15	OV/4-4	S. Pamela	UK	ELM and ELM-control Simulations
15:40	OV/4-5	E. J. Strait	USA	Experiments in Disruption Avoidance for ITER Using Passive and Active Control

OV/5 Overviews 5: Magnetic Fusion

Chair: Hyeon Park (Korea, Rep. of) *Main Hall* **(16:40 – 18:45)**

Time	Id	Presenter		Title
16:40	OV/5-1	M. Xu	China, P. R.	Overview of HL-2A Recent Experiments
17:05	OV/5-2	S. Coda	Switzerland	Physics Research on the TCV Tokamak Facility: From Conventional to Alternative Scenarios and Beyond
17:30	OV/5-3	R. L. Tanna	India	Overview of Operation and Experiments in the ADITYA-U Tokamak
17:55	OV/5-4	N. N. Bakharev	Russian Fed.	Tokamak Research in Ioffe Institute
18:20	OV/5-5Ra	J. E. Menard	USA	Overview of Recent Progress in Understanding NSTX and NSTX-U Plasmas
	OV/5-5Rb			Overview of New MAST Physics in Anticipation of First Results from MAST Upgrade

P2 Posters 2

Main Hall **(14:00 – 18:45)**

Id	Presenter		Title
EX/1-1	P. Lauber	Germany	Strongly Nonlinear Energetic Particle Dynamics in ASDEX-Upgrade Scenarios with Core Impurity Accumulation
EX/1-2	M. Podestà	USA	Reduced Energetic Particle Transport Models Enable Comprehensive Time-Dependent Tokamak Simulations
EX/1-3Ra	S. Yamamoto	Japan	Impact of ECH/ECCD on Fast-Ion-Driven MHD Instabilities in Helical Plasmas
EX/1-3Rb	S. Ohdachi	Japan	Excitation Mechanism of the Energetic Particle Driven Resistive Interchange Mode and Strategy to Control the Mode in Large Helical Device
TH/1-1	W. Shen	China, P. R.	Simulations of Energetic Particle Driven Instabilities and Fast Particle Redistribution in EAST Tokamak
TH/1-2	Y. Todo	Japan	Critical Fast Ion Distribution in Phase Space for the Synchronized Sudden Growth of Multiple Alfvén Eigenmodes and the Global Transport of Fast Ions
EX/P2-1	D. F. Kong	China, P. R.	$E_r \times B$ Shear Effect on Cross Phase Mitigates ELM at High Collisionality
EX/P2-3	L. Zhang	China, P. R.	Tungsten Control in NBI-Dominant H-Mode Discharges in EAST Tokamak
EX/P2-4	G. S. Xu	China, P. R.	A Promising Grassy ELM Regime for High-Performance Steady-State Operations with Metal Wall in EAST and CFETR
EX/P2-5	M. Sharma	India	Leak Width in a Multicusp Field Configuration: A Revisit with a Versatile Experimental Device
EX/P2-6	U. Kumar	India	Effect of the Controlled Density Gradient on Equilibrium and Confinement in a Simple Toroidal Device with Two Plasma Sources
EX/P2-7	M. Kumar	India	Imaging of SST-1 Plasma with LHCD Power
EX/P2-8	L. Wang	China, P. R.	Advances in Plasma-Wall Interaction Control for H-Mode Operation over 100 s with ITER-like Tungsten Divertor on EAST
EX/P2-9	J. Pramanik	India	Characterization of Particle Growth and Enhancement of Sputtering Yields in a Cogenerated Dusty Plasma

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P2 *continued…*

Id	Presenter		Title
EX/P2-10	P. Sharma	India	A Transmission Electron Microscopy Investigation of Defects Induced in Tungsten Foils by Au and B Ion Irradiation
EX/P2-11	M. Himabindu	India	Modelling Studies of X-Divertor Configuration on SST-1 Tokamak Using SOLPS5.1
EX/P2-12	P. J. Sun	China, P. R.	Experimental Study of Multiscale Interaction between (Intermediate, Small)-Scale Microturbulence and MHD Modes in EAST Plasmas
EX/P2-13	M. P. Bhuva	India	Effect of Cathode Geometry on Magnetically Coupled Hollow Cathode Plasma Source
EX/P2-14	L. Xu	China, P. R.	Kink Mode Study in EAST High-β_P Plasma
EX/P2-15	J. Huang	China, P. R.	Fast-Ion Studies in High Performance Fully Noninductive Discharges on EAST
EX/P2-16	A. Ekedahl	France	Progress Towards Development of Long Pulse ITER Operation through RF Heated H-Mode Experiments on EAST and HL-2A
EX/P2-17	C. Mallick	India	Observations of Plasma Stimulated Electrostatic Sideband Emission and Harmonic Distortion: Evidence of Overdense Plasma Generation Inside a Microwave Discharge Ion Source
EX/P2-18	S. Das	India	Radial Characteristics of a Magnetized Plasma Column
EX/P2-20	P. Srivastav	India	Investigations on Temperature Fluctuations and Energy Transport in ETG Dominated Large Laboratory Plasma
EX/P2-22	D. Rathi	India	Preliminary Results of Wall Conditioning Experiments Using High Power ICRH System on SST-1 at Different Toroidal Magnetic Fields
EX/P2-23	L. Soto	Chile	Recent Finding in Fusion Studies Using Table Top and Miniaturized Dense Plasma Focus Devices Operating from Hundred Joules to less than One Joule
EX/P2-26	D. Moreau	France	Model-Predictive Kinetic Control for Steady State Plasma Operation Scenarios on EAST
EX/P2-27	J. Promping	Thailand	Simulation Study of Heat Transport with On-Off Axis ICRH in Thailand Tokamak Using BALDUR Code
TH/P2-1	D. Zarzoso	France	Transport Induced by Energetic Geodesic Acoustic Modes

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P2 *continued…*

Id	Presenter		Title
TH/P2-2	U. Maurya	India	Burning Plasma Simulation with α-Particle Heating
TH/P2-3	H. He	China, P. R.	Simulation of Toroidicity-Induced Alfvén Eigenmode Excited by Energetic Ions in HL-2A Tokamak Plasmas
TH/P2-4	R. Kleiber	Germany	Global Gyrokinetic Multimodel Simulations of ITG and Alfvénic Modes for Tokamaks and the First Operational Phase of Wendelstein 7-X
TH/P2-5	P. Garcia-Martinez	Argentina	Reconstruction of MHD Modes for Energetic Particle Dynamics Studies in Toroidal Equilibria with Arbitrary q Profiles
TH/P2-6	Z. Qiu	China, P. R.	Nonlinear Decay and Plasma Heating by Toroidal Alfvén Eigenmodes
TH/P2-7	Y. Hou	China, P. R.	Analysis of Energetic Particle Driven Toroidal Alfvén Eigenmodes in CFETR Baseline Scenario
TH/P2-8	A. Snicker	Finland	The Combined Effect of Neoclassical Tearing Modes and ELM Control Coils on Fast-Ions: Validation in AUG and Extrapolation for ITER
TH/P2-9	A. Biancalani	Germany	Self-Consistent Gyrokinetic Description of the Interaction between Alfvén Modes and Turbulence
TH/P2-10	G. Vlad	Italy	Comparison of Energetic Particle Radial Transport between Single-n and Multiple-n Simulations of Alfvénic Modes
TH/P2-11	H. Wang	Japan	Simulations of Two Types of Energetic Particle Driven Geodesic Acoustic Modes and the Energy Channelling in the Large Helical Device Plasmas
TH/P2-12	R. Seki	Japan	Comprehensive Magnetohydrodynamic Hybrid Simulations of Fast Ion Losses due to the Fast Ion Driven Instabilities in the Large Helical Device
TH/P2-14	J. P. Graves	Switzerland	Advanced Energetic Ion and Impurity Ion Physics in 2D and 3D Magnetically Confined Plasmas
TH/P2-15	Y. V. Yakovenko	Ukraine	Simulations of the Sawtooth-Induced Redistribution of Fast Ions in JET and ITER
TH/P2-16	E. V. Belova	USA	Numerical Simulations of GAE Stabilization in NSTX-U

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P2 *continued…*

Id	Presenter		Title
TH/P2-17	Z. Lin	USA	Verification and Validation of Integrated Simulation of Energetic Particles in Toroidal Plasmas

IFE/1 Inertial Fusion Experiments & Theory

Chair: Sylvie Jacquemot (France) *Main Hall* **(08:30 – 10:15)**

Time	Id	Presenter		Title
08:30	IFE/1-1	Y. Arikawa	Japan	Two-Colour Mixed Petawatt Laser Designed for Fast Ignition Experiment
08:50	IFE/1-2	S. Fujioka	Japan	Production of keV-Temperature Plasma Core with Magnetized Fast Isochoric Heating
09:10	IFE/1-3	R. J. Leeper	USA	Liquid DT Layer Approach to Inertial Confinement Fusion
09:30	IFE/1-4	J. M. Perlado	Spain	Thermo-Mechanical and Atomistic Assessment of First Wall and Optics in Nonprotective Chamber in Inertial Fusion Energy
09:50	IFE/1-5	A. Iwamoto	Japan	Demonstrations of Foam Shell and Infrared Heating Methods for FIREX Targets

EX/2 Pedestal & ELM Optimization

Chair: Richard Buttery (USA) *Main Hall* **(10:45 – 12:30)**

Time	Id	Presenter		Title
10:45	EX/2-1	E. de la Luna	Spain	Impact of ELM Control in JET Experiments on H-Mode Terminations with/without Current Ramp-Down and Implications for ITER
11:05	EX/2-2	D. R. Ernst	USA	Viability of Wide Pedestal QH-Mode for Burning Plasma Operation
11:25	EX/2-3	T. Happel	Germany	Advances in the Understanding of the I-Mode Confinement Regime: Access, Stationarity, Edge/SOL Transport and Divertor Impact
11:45	EX/2-4	P. B. Snyder	USA	High Fusion Performance in Super H-Mode Experiments on Alcator C-Mod and DIII-D
12:05	EX/2-5	B. Labit	Switzerland	Plasma Shape and Fuelling Dependence on the Small ELM Regime in TCV and AUG

P3 Posters 3

Main Hall **(08:30 – 12:30)**

Id	Presenter		Title
EX/P3-1	M. Yoshikawa	Japan	Fluctuation Suppression by the Potential Formation in GAMMA 10/PDX Plasma
EX/P3-2	T. Minami	Japan	Effect of Magnetic Field Structure on Electron Internal Transport Barrier and its Role for the Barrier Formation in Heliotron J
EX/P3-3	S. Ohshima	Japan	The Configuration Dependence of Isotope Effects on Turbulence System in Heliotron J
EX/P3-4	K. Kamiya	Japan	Multiple Turbulent Plasma States in the H-Mode Transition on JT-60U
EX/P3-5	H. Yamada	Japan	Characterization of Isotope Effect on Confinement of Dimensionally Similar NBI-Heated Plasmas in LHD
EX/P3-6	K. Tanaka	Japan	Isotope Effects on Confinement and Turbulence in ECRH Plasma of LHD
EX/P3-7	T. Tokuzawa	Japan	Rapid Radial Propagation of Momentum Change and Flow Oscillation Associated with a Pellet Injection
EX/P3-8	M. Nishiura	Japan	Experimental Analysis of Self-Organized Structure and Transport on Magnetospheric Plasma Device RT-1
EX/P3-9	N. Ezumi	Japan	Synergistic Effect of Impurity and Hydrogen Gas Puffs on Plasma Detachment in the GAMMA 10/PDX Tandem Mirror
EX/P3-10	M. Kobayashi	Japan	Core Transport Improvement in Stable Detachment with RMP Application to the Edge Stochastic Layer of LHD
EX/P3-11	T. Oishi	Japan	Effect of Deuterium Plasmas on Carbon Impurity Transport in the Edge Stochastic Magnetic Field Layer of Large Helical Device
EX/P3-12	K. Hanada	Japan	Particle Balance Investigation with the Combination of Rate Equations of Hydrogen State and Hydrogen Barrier Model in Long Duration Discharges on All-Metal PFW QUEST
EX/P3-13	Y. H. Ding	China, P. R.	Recent Progresses on the RMP Researches Towards Active Control of Tearing Mode in the J-TEXT Tokamak
EX/P3-14	Y. Suzuki	Japan	Investigation of Magnetic Topology on Spontaneous Transition Phenomena for High-β Plasma of Large Helical Device

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P3 *continued…*

Id	Presenter		Title
EX/P3-15	K. Y. Watanabe	Japan	Dependence of RMP Penetration Threshold on Plasma Parameters and Ion Species in Helical Plasmas
EX/P3-16	Y. Takemura	Japan	Study of Locking Mechanism of Locked-Mode-Like Instability in Helical Plasmas
EX/P3-17	M. Nagata	Japan	Experimental Studies of Plasmoid Reconnection for Closed Flux Current Generated by Coaxial Helicity Injection on HIST
EX/P3-19	H. Tanaka	Japan	Electron Bernstein Wave Heating and Current Drive with Multielectron Cyclotron Resonances During Noninductive Start-Up on LATE
EX/P3-20	K. Ogawa	Japan	Energetic-Ion Confinement Studies by Using Comprehensive Neutron Diagnostics in the Large Helical Device
EX/P3-21	H. Idei	Japan	Fully Noninductive 2nd Harmonic Electron Cyclotron Current Ramp-Up with Focussed Polarized Beams in the QUEST Spherical Tokamak
EX/P3-22	H. Tanabe	Japan	Investigation of Fine Structure Formation of Guide Field Reconnection During Merging Plasma Startup of Spherical Tokamak in TS-3U
EX/P3-23	A. Ejiri	Japan	Plasma Current Generation and Ramp-Up by the Lower Hybrid Wave Using Outboard-Launch and Top-Launch Antennas on the TST-2 Spherical Tokamak
EX/P3-24	Y. Ono	Japan	Scaling Study of Reconnection/Merging Heating of Spherical Tokamak Plasmas for Direct Access to Burning Plasma
EX/P3-25	T. Wakatsuki	Japan	Safety Factor Profile Control with Reduced CS Flux Consumption During Plasma Current Ramp-Up Phase Using Reinforcement Learning Technique
EX/P3-26	G. De Tommasi	Italy	2D and 3D Modelling of JT-60SA for Disruptions and Plasma Start-Up
EX/P3-27	G. Motojima	Japan	New Approach to the Control of Particle Recycling Using Divertor Pumping in LHD

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P3 *continued…*

Id	Presenter		Title
FIP/P3-1	F. Bedoya	USA	Surface Characterization of Li Coatings and their Interaction with Plasmas for Fusion Applications via Ion Beam Analysis Techniques
FIP/P3-2	K. Gi	Japan	Contribution of Fusion Energy to Low-Carbon Development under the Paris Agreement and Accompanying Uncertainties
FIP/P3-3	H. Noto	Japan	Dispersion Strengthened Copper Alloys Produced by Mechanical Alloying and Hot Isostatic Pressing for Divertor Application
FIP/P3-4	M. Kobayashi	Japan	Neutron Flux Distributions in the LHD Torus Hall Evaluated by an Imaging Plate Technique in the First Campaign of Deuterium Plasma Experiment
FIP/P3-5	P. Kanth	India	A Multiparameter Optimization Technique Considering Temporal and Spatial Variation in Nuclear Response of Materials in Fusion Devices
FIP/P3-6	K. Ochiai	Japan	Design Progress of Advanced Fusion Neutron Source for JA/DEMO Fusion Reactor
FIP/P3-7	G. Stankunas	Lithuania	Neutronic Analysis of IFMIF-DONES Test Cell Cooling System
FIP/P3-8	C. Day	Germany	The DEMO Fuel Cycle: Novel Technologies for Tritium Inventory Reduction
FIP/P3-9	Ž. Štancar	Slovenia	Multiphysics Approach to Plasma Neutron Source Modelling at the Tokamak JET
FIP/P3-10	S. P. Smith	USA	The Potential for Retention of Spin Polarization to Raise Fusion Reactivity
FIP/P3-12	A. Abhishek	India	Artificial Neural Network for Yield Strength Prediction of Irradiated RAFM Steels
FIP/P3-14	R. Joshi	India	Modification in LHCD DAC System to Incorporate Measurement of RF Power
FIP/P3-15	S. S. Mukherjee	India	Thermal Performance Analysis of Al_2O_3–Water Nanofluid as a Coolant in Nuclear Applications
FIP/P3-16	A. Arumugam	India	RGA Analysis and Surface Analysis of SST-1 Graphite Tiles in High Temperature Vacuum Baking
FIP/P3-18	K. P. Singh	India	Studies on High Temperature Vacuum Brazing of Tungsten to Tungsten Alloy Materials for DEMO Divertor Application

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P3 *continued…*

Id	Presenter		Title
FIP/P3-19	M. Sugimoto	France	Deuteron Beam Commissioning of the Linear IFMIF Prototype Accelerator Source and LEBT
FIP/P3-20	D. Panayotov	EC	Overview of the Methods Developed for Fission Plants Safety Relevant to the Safety of Fusion Facilities
FIP/P3-23	A. S. Arakcheev	Russian Fed.	Status of Studies of Pulsed Heat Load Influence on Tungsten at BETA Facility and Station of SR Scattering "Plasma" in BINP
FIP/P3-25	M. Coleman	UK	Global Supply of Tritium for Fusion R&D
FIP/P3-26	J. M. Park	USA	The Advanced Tokamak Path to a Compact Net Electric Pilot Plant
FIP/P3-27	S. Shah	India	Neutron Irradiation Impact on ITER Grade Insulating Material
FIP/P3-28	S. Tiwari	India	Conceptual Design of Neutron Activation System for IN-LLCB TBM
FIP/P3-29	M. Rajput	India	Energy Differential and Displacement Damage Cross Section of DT Neutron Induced Reactions on Fusion Reactor Materials (Fe, Cr & W)
FIP/P3-30	A. Patel	India	Application of ANSYS FLUENT MHD Code for Liquid Metal MHD Studies
FIP/P3-31	S. G. Khambholja	India	Structural and Vibrational Properties of Lead-Lithium Alloys: A First Principles Study
FIP/P3-32	K. S. Bhatt	India	Structural Analysis for Strength and Fatigue Life of Half Coupling Weldment for Large Cooling Water Pipes
FIP/P3-33	S. S. Vala	India	Performance of 14-MeV Neutron Generator at IPR
FIP/P3-34	D. Dubey	India	Tritium Handling and Recovery System for Accelerator Based 14-MeV Neutron Generator
FIP/P3-34	V. Shukla	India	Extent of Tritium Contamination of Helium Circuit in a Fusion Reactor: Probable Scenarios
FIP/P3-36	E. Pajuste	Latvia	Novel Method for Determination of Tritium Depth Profiles in Metallic Samples
FIP/P3-38	P. Chakraborty	India	Effect of Magnetic Field on the Corrosion Behaviour of Indian RAFMS in Liquid PbLi
FIP/P3-39	P. A. Rayjada	India	Er_2O_3 Coating by Multilayer Metallic Sputtering and Intermediate Oxidation Approach

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P3 *continued…*

Id	Presenter		Title
FIP/P3-40	J. Jiang	China, P. R.	Development of HINEG and its Experimental Campaigns
FIP/P3-41	V. M. Chernov	Russian Fed.	Radiation Properties of the Metal Structural Materials during Low-Temperature Damaging Irradiation
FIP/P3-42	C. S. Sasmal	India	Effect of Simulated Postweld Heat Treatment on the Microstructure and Mechanical Properties of IN-RAFM Steel
FIP/P3-44	A. Attri	India	Ion Irradiation Induced Modifications in Tungsten Foils
FIP/P3-45	T. Tulenbergenov	Kazakhstan	Tungsten Fuzz Formation on the Nitrided Tungsten Surface
FIP/P3-46	H. L. Swami	India	Neutronics Experiment for Design Validation of Indian TBM Shield Module
FIP/P3-47	P. Bharathi	India	Study on Production and Extraction of Negative Ion Impurity Ions in a Caesiated Negative Ion Source
FIP/P3-48	A. Patel	India	3 MW Dual-Output High Voltage Power Supply Operation: Results for Accuracy, Stability and Protection Test
FIP/P3-49	A. J. Deka	India	Evaluation of Beam Properties of a Negative Hydrogen Source by Doppler Shift Spectroscopy
FIP/P3-50	S. S. Mukherjee	India	Thermohydraulic Analysis of Forced Flow Helium Cooled Cryopanels of Cryopump Using Venecia Code
FIP/P3-51	J. S. Mishra	India	Pellet Fuelling Prospects and Injector System for ADITYA-U Tokamak
FIP/P3-52	P. Bhatt	India	Performance of Transmission Line System at 42.0 ± 0.2 GHz for an Indigenous Gyrotron System
FIP/P3-53	Y. M. Jain	India	Development and Qualification of Passive Active Multijunction (PAM) Launcher for LHCD System of ADITYA-Upgrade Tokamak
FIP/P3-54	R. Gangradey	India	Effect of Sorbent Selection and Geometrical Arrangement of Cryopanels on Pumping Speed of Cryopump
FIP/P3-55	L. Hao	China, P. R.	Advanced Capabilities of Multifunctional Calculation Programme SuperMC3.2 for Complex Nuclear System

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P3 *continued…*

Id	Presenter		Title
FIP/P3-56	M. R. Jana	India	Development of Technology for Fabrication of Prototype Ion Extraction Grid for Fusion Research
FIP/P3-57	S. S. Chauhan	India	Development of RF Based Capacitively-Coupled Plasma System for Deposition of Tungsten Nanolayers on Graphite
FIP/P3-58	R. Kumar	India	Real-Time Feedback Control System for Plasma Position Stabilization in ADITYA-U Tokamak
FIP/P3-62	A. Patel	India	Design and Simulation Studies of Calorimetric Dummy Load for Gyrotron System
FIP/P3-63	S. P. Gerhardt	USA	Overview of the NSTX-U Recovery Project Physics and Engineering Design
FIP/P3-64	K. A. Jadeja	India	Novel Approach of Pulsed-Glow Discharge Wall Conditioning in ADITYA Upgrade Tokamak
FIP/P3-65	C. Walters	UK	New Fusion Facilities at UKAEA: FTF and H3AT
FIP/P3-66	J. Yagi	Japan	A Concept of Self-Cooled Breeding Blanket with Advanced Molten Salt FLiNaK for High-Efficiency and Long-Life Operation

EX/3 Plasma Performance & Control

Chair: Evgenii Gusakov (Russian Fed.) *Main Hall* **(14:00 – 16:10)**

Time	Id	Presenter		Title
14:00	EX/3-1	X. Z. Gong	China, P. R.	Integrated Operation of Steady-State Long Pulse H-Mode in EAST
14:20	EX/3-2	N. Vianello	Italy	Developing Steady State ELM-Absent H-Mode Scenarios with Advanced Divertor Configuration in EAST Tokamak
14:40	EX/3-3	F. Turco	USA	Integration of the High-N Hybrid Scenario to a High Performance Pedestal, Stable Zero Torque Operation and a Divertor Solution
15:00	EX/3-4	C. Giroud	UK	Optimization of JET-DT and ITER Operation by Developing an Understanding of the Role of Low-Z Impurity on the H-Mode Pedestal
15:20	EX/3-5	G. Fuchert	Germany	Increasing the Density in W7-X: Benefits and Limitations
15:40	EX/3-6	L. Garzotti	UK	Scenario Development for DT Operation at JET

EX/4 and TH/2 H-Mode & Pedestal

Chair: Saskia Mordijck (USA) *Main Hall* **(16:40 – 18:45)**

Time	Id	Presenter		Title
16:40	TH/2-1	S.-H. Ku	USA	A Gyrokinetic Discovery of Fast L-H Bifurcation Physics in a Realistic, Diverted, Tokamak Edge Geometry
17:00	EX/4-1	J. C. Hillesheim	UK	Implications of JET-ILW L-H Transition Studies for ITER
17:20	EX/4-2	L. Schmitz	USA	L-H Transition Trigger Physics in ITER-Similar Plasmas with and without Applied $n = 3$ Magnetic Perturbations
17:40	TH/2-2	M. T. Kotschenreuther	USA	Gyrokinetic Analysis and Simulations of Pedestals
18:00	EX/4-3	J. T. McClenaghan	USA	Transport Barriers in DIII-D High-β_p Plasmas and Development of Candidate Steady State Scenarios for ITER
18:20	EX/4-4	T. Tala	Finland	Core Density Peaking Experiments in JET, DIII-D and C-Mod in Various Operational Scenarios Driven by Fuelling or Transport

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Main Hall **(14:00 – 18:45)**

Id	Presenter		Title
EX/2-1	E. de la Luna	Spain	Impact of ELM Control in JET Experiments on H-Mode Terminations with/without Current Ramp-Down and Implications for ITER
EX/2-2	D. R. Ernst	USA	Viability of Wide Pedestal QH-Mode for Burning Plasma Operation
EX/2-3	T. Happel	Germany	Advances in the Understanding of the I-Mode Confinement Regime: Access, Stationarity, Edge/SOL Transport and Divertor Impact
EX/2-4	P. B. Snyder	USA	High Fusion Performance in Super H-Mode Experiments on Alcator C-Mod and DIII-D
EX/2-5	B. Labit	Switzerland	Plasma Shape and Fuelling Dependence on the Small ELM Regime in TCV and AUG
IFE/1-1	Y. Arikawa	Japan	Two-Colour Mixed Petawatt Laser Designed for Fast Ignition Experiment
IFE/1-2	S. Fujioka	Japan	Production of keV-Temperature Plasma Core with Magnetized Fast Isochoric Heating
IFE/1-3	R. J. Leeper	USA	Liquid DT Layer Approach to Inertial Confinement Fusion
IFE/1-4	J. M. Perlado	Spain	Thermo-Mechanical and Atomistic Assessment of First Wall and Optics in Nonprotective Chamber in Inertial Fusion Energy
IFE/1-5	A. Iwamoto	Japan	Demonstrations of Foam Shell and Infrared Heating Methods for FIREX Targets
EX/P4-1	A. Sinha	India	Broadband Characterization of High Temperature Blackbody Source with Fourier Transform Michelson Interferometer for ECE Measurements
EX/P4-2	U. C. Nagora	India	Design and Development of 140 GHz D-Band Phase-Locked Heterodyne Interferometer System for Real-Time Density Measurement
EX/P4-3	S. Patel	India	Study of Iron Impurity Behaviour Using VUV Spectroscopy in ADITYA and ADITYA-U Tokamak
EX/P4-4	S. Banerjee	India	Runaway Electron (RE) Mitigation Using Supersonic Molecular Beam Injection in the ADITYA-U Tokamak

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P4 *continued…*

Id	Presenter		Title
EX/P4-5	M. B. Chowdhuri	India	Neon Gas Seeded Radiative Improved Mode in ADITYA-U Tokamak
EX/P4-6	R. Manchanda	India	Impurity Screening in High Density ADITYA Tokamak Plasmas
EX/P4-7	K. Tahiliani	India	Radiation Power Loss Study During Gas Puff Induced Disruptions in ADITYA-U Tokamak
EX/P4-9	K. Shah	India	Observations of Intrinsic Toroidal Rotation Using X-Ray Crystal Spectrometer in ADITYA-U Tokamak
EX/P4-10	G. Shukla	India	Controlling Plasma Rotation Using Periodic Gas-Puff in ADITYA-U Tokamak
EX/P4-11	L. T. Lachhvani	India	Effect of Externally Applied Radial Electric Field (Biased-Electrode) on Geodesic Acoustic Modes in SINP Tokamak
EX/P4-12	S. Akkireddy	India	Application of TEM to Study the Changes in Subsurface Defects in Tungsten Samples as a Function of Annealing Temperature
EX/P4-13	N. Yadav	India	Effect of Multiple Periodic Gas Puff on Neutral Temperature in ADITYA-U Tokamak
EX/P4-14	P. Pandit	India	Design of a NIR Spectrometer for ADITYA-U Tokamak and Initial Results
EX/P4-15	S. Mishra	India	Mass Dependent Impurity Transport Study in ADITYA Tokamak
EX/P4-16	A. Kanik	India	Plasma Potential Measurements in the Edge Region of ADITYA-U Tokamak Using Reciprocating Laser Heated Emissive Probes
EX/P4-17	T. Macwan	India	Edge Current Density Profile Measurement Using an Array of Miniature Magnetic Probes in ADITYA-U Tokamak
EX/P4-18	J. V. Raval	India	Development of Multipurpose Soft X-Ray Tomography System for ADITYA-U
EX/P4-19	J. J. U. Buch	India	Ka-Band Reflectometer System for Measuring Radial Electron Density Profile at IPR
EX/P4-20	J. K. Joshi	India	Experimental Investigation of Power Coupling by RF Antenna into Plasmas in Presence of Magnetized Ions

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P4 *continued…*

Id	Presenter		Title
EX/P4-21	S. N. Pandya	India	A Diagnostic Approach for the Detection of Spatially Distributed Low Energy Confined Runaway Electrons in the ADITYA-U Tokamak by Means of Synchrotron Emission Imaging in the Sub-Millimetre Wavelength Band
EX/P4-22	J. Kumar	India	Design and Testing of X-Mode Reflectometry System for Coupling Studies of Lower Hybrid Waves in ADITYA-U Tokamak
EX/P4-23	S. Aggarwal	India	Design and Development of Passive Charge Exchange Neutral Particle Analyser for ADITYA-U Tokamak
EX/P4-24	L. M. Awasthi	India	Excitation of Electron Temperature Gradient (ETG) Turbulence and Effect on Plasma Transport in LVPD
EX/P4-25	K. Ajay	India	ADITYA Experimental Results of Core Ion Temperature Measurements on ADITYA Tokamak Using Four Channel Neutral Particle Analyser
EX/P4-26	P. K. Srivastava	India	Chord Average Density Measurement Using Microwave Interferometry in LVPD
EX/P4-27	A. K. Sanyasi	India	Investigations on Growth of Quasi-Longitudinal (QL) Whistlers with Energy Scaling of Energetic Electrons in LVPD
EX/P4-28	K. K. Mishra	India	Fast Wave Induced ICRF Plasma Expansion in ADITYA Torus
EX/P4-29	N. Patel	India	Gas Fuelling Control System of ADITYA Tokamak
EX/P4-30	R. Rajpal	India	Integrated System Electronics and Instrumentation; Operation and Diagnostic for ADITYA-U Tokamak
EX/P4-31	S. Aich	India	Plasma Column Position Measurements Using Magnetic Diagnostics in ADITYA-U Tokamak
IFE/P4-1	G. M. Elaragi	Egypt	Experimental Discharge Characterization of IEC Plasma Device
IFE/P4-4	H. Hora	Australia	H-^{11}B Fusion Reactor with Extreme Laser Pulses for Non-LTE Ignition
IFE/P4-6	Y. Mori	Japan	Development of Shell Injection System for the Future IFE Power Plant

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P4 *continued…*

Id	Presenter		Title
IFE/P4-7	B. V. Kuteev	Russian Fed.	Mechanical Mockup of IFE Reactor Intended for the Development of Cryogenic Targets Mass Production and Rep-Rate Delivery into the Reaction Chamber
IFE/P4-8	N. Iwata	Japan	Electron Acceleration in Dense Plasmas Heated by Picosecond Relativistic Laser
IFE/P4-9	H. Nagatomo	Japan	Target Design Study of Fast Ignition for Ignition and Burning Experiments
IFE/P4-10	T. Watari	Japan	Progress of a DPSSL Based R&D Facility TERU for IFE Technology and Industrial Applications
IFE/P4-13	K. F. Al-Shboul	Jordan	Interpenetration and Stagnation in Collapsing Plasmas
TH/P4-1	A. K. Singh	India	Analysis of Electron Cyclotron Wave Assisted Plasma Start-Up in SST-1
TH/P4-2	T. Y. Xia	China, P. R.	Simulations on the Particle and Heat Fluxes for the RF Heating H-Mode on EAST
TH/P4-5	T. Kurki-Suonio	Finland	Beam Ion Performance and Power Loads in the ITER Prefusion Power Operating Scenarios (PFPO) with Reduced Field and Current
TH/P4-6	P. Aleynikov	Germany	ECRH and Mode Conversion in Overdense W7-X Plasmas
TH/P4-7	A. Kuley	India	Global PIC Simulation of RF Waves in Toroidal Geometry
TH/P4-8	J. K. Atul	India	Mode Converted Electrostatic Nonlinear Ion-Ion Hybrid Mode in Tokamak Plasma
TH/P4-9	S. Usami	Japan	Particle Simulation Studies on Ion Effective Heating through Merging Plasmas
TH/P4-10	E. Z. Gusakov	Russian Fed.	Anomalous Absorption and Emission in ECRH Experiments due to Parametric Excitation of Localized UH Waves
TH/P4-11	P. V. Minashin	Russian Fed.	Modelling of Electron Cyclotron Resonance Heating and Current Drive in the T-15-MD Tokamak with GENRAY and CQL3D Codes
TH/P4-12	A. K. Ram	USA	Theoretical and Computational Studies on the Scattering of Radiofrequency Waves by Fluctuations
TH/P4-13	N. Bertelli	USA	The Impact of the Hydrogen Species on the HHFW Performance with Possible New NSTX-U Scenarios

EX/5, PPC/1, TH/3 Integrated Modelling & Transport

Chair: Baonian Wan (P. R. China) *Main Hall* **(08:30 – 10:15)**

Time	Id	Presenter		Title
08:30	TH/3-1	J. Garcia	France	First Principles and Integrated Modelling Achievements Towards Trustful Fusion Power Predictions for JET and ITER
08:50	EX/5-1	K. Nagaoka	Japan	Transport Characteristics of Deuterium and Hydrogen Plasmas with Ion Internal Transport Barrier in LHD
09:10	TH/3-2	F. J. Casson	UK	Predictive Multichannel Flux-Driven Modelling to Optimize ICRH Tungsten Control in JET
09:30	PPC/1-1	N. Hayashi	Japan	Predictive Integrated Modelling of Plasmas and their Operation Scenarios towards Exploitation of JT-60SA Experiment
09:50	EX/5-2	C. Chrystal	USA	Predicting the Toroidal Rotation Profile for ITER

EX/6 and TH/4 Runaways & Disruption Mitigation

Chair: Yeong-Kook Oh (Korea, Rep. of) *Main Hall* **(10:45 – 12:30)**

Time	Id	Presenter		Title
10:45	EX/6-1	C. Paz-Soldan	USA	Advances in Runaway Electron Control and Model Validation for ITER
11:05	TH/4-1	J. R. Martín Solís	Spain	Runaway Electron Mitigation in ITER Disruptions by Injection of High-Z Impurities
11:25	TH/4-2	A. Matsuyama	Japan	Self-Consistent Runaway Beam Formation in 3D Magnetic Fields During Radiation-Driven Disruptions
11:45	TH/4-3	L. Carbajal	USA	Pitch Angle Dynamics and Synchrotron Emission of Runaway Electrons in Quiescent and Disrupted DIII-D Plasmas
12:05	TH/4-4	H. Strauss	USA	Asymmetric Wall Force Reduction in ITER and JET Disruptions

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Main Hall **(08:30 – 12:30)**

Id	Presenter		Title
EX/3-1	X. Gong	China, P. R.	Integrated Operation of Steady-State Long Pulse H-Mode in EAST
EX/3-2	G. Calabrò	Italy	Developing Steady State ELM-Absent H-Mode Scenarios with Advanced Divertor Configuration in EAST Tokamak
EX/3-3	F. Turco	USA	Integration of the High-N Hybrid Scenario to a High Performance Pedestal, Stable Zero Torque Operation and a Divertor Solution
EX/3-4	C. Giroud	UK	Optimization of JET-DT and ITER Operation by Developing an Understanding of the Role of Low-Z Impurity on the H-Mode Pedestal
EX/3-5	G. Fuchert	Germany	Increasing the Density in W7-X: Benefits and Limitations
EX/3-6	L. Garzotti	UK	Scenario Development for DT Operation at JET
EX/4-1	J. C. Hillesheim	UK	Implications of JET-ILW L-H Transition Studies for ITER
EX/4-2	L. Schmitz	USA	L-H Transition Trigger Physics in ITER-Similar Plasmas with and without Applied $n = 3$ Magnetic Perturbations
EX/4-3	J. T. McClenaghan	USA	Transport Barriers in DIII-D High-β_p Plasmas and Development of Candidate Steady State Scenarios for ITER
EX/4-4	T. Tala	Finland	Core Density Peaking Experiments in JET, DIII-D and C-Mod in Various Operational Scenarios Driven by Fuelling or Transport
TH/2-1	S.-H. Ku	USA	A Gyrokinetic Discovery of Fast L-H Bifurcation Physics in a Realistic, Diverted, Tokamak Edge Geometry
TH/2-2	M. T. Kotschenreuther	USA	Gyrokinetic Analysis and Simulations of Pedestals
EX/P5-2	G. S. Kurskiev	Russian Fed.	Thermal Energy Confinement at the Globus-M Spherical Tokamak
EX/P5-3	W. Z. Zhong	China, P. R.	Plasma Confinement and Pedestal Dynamics Responses to Impurity Seeding in HL-2A H-Mode Plasmas
EX/P5-4	M. Jiang	China, P. R.	Localized Modulation of Turbulence by Magnetic Islands on HL-2A Tokamak
EX/P5-6	J. Cheng	China, P. R.	Pedestal Dynamics in Inter-ELM Phase on HL-2A Tokamak

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P5 *continued…*

Id	Presenter		Title
EX/P5-8	Y. P. Zhang	China, P. R.	Effect of LBO-Seeded Impurity on ELMs in the HL-2A Tokamak
EX/P5-9	W. Mao	China, P. R.	Characteristics of Electromagnetic Turbulence on KTX Experiment Device
EX/P5-10	A. V. Melnikov	Russian Fed.	Electric Potential and Turbulence in OH and ECRH Low-Density Plasmas
EX/P5-13	L. N. Khimchenko	Russian Fed.	Ecton Mechanism of Energy Load on ITER-Grade Tungsten Limiter T-10 Tokamak and Forecast for ITER
EX/P5-15	X. Q. Ji	China, P. R.	Nonlinear Evolution of Multihelicity Neoclassical Tearing Modes in HL-2A Low Rotation Plasmas
EX/P5-16	D. V. Ryzhakov	Russian Fed.	Peculiar Properties of Disruptions on T-10 Tokamak at Different Edge Safety Factor Values
EX/P5-19	P. W. Shi	China, P. R.	Energetic-Ion Driven Toroidal and Global Alfvén Eigenmodes on HL-2A
EX/P5-20	W. Chen	China, P. R.	Suppression and Destabilization of Ion Fishbone Activities on HL-2A
EX/P5-21	M. R. Nurgaliev	Russian Fed.	Influence of Electron Cyclotron Resonance Heating on Ion Heat Conductivity in T-10 Plasma
EX/P5-23	Y. Xu	China, P. R.	Physics and Engineering Design for Chinese First Quasi-Axisymmetric Stellarator(CFQS)
EX/P5-25	V. V. Prikhodko	Russian Fed.	Stability and Confinement Studies in the Gas Dynamic Trap
EX/P5-26	A. V. Burdakov	Russian Fed.	Plasma Transport in Linear and Helical Multiple-Mirror Systems
EX/P5-27	L. W. Yan	China, P. R.	Real-Time Control System of Neoclassical Tearing Modes in the HL-2A Tokamak
EX/P5-28	Y. Liu	China, P. R.	Development of the $q = 1$ Advanced Tokamak Scenarios in HL-2A
EX/P5-30	X. M. Song	China, P. R.	First Plasma Scenario Development for HL-2M
TH/P5-1	C. A. Bowie	Australia	Sandpile Modelling of Pellet Pacing in Fusion Plasmas
TH/P5-3	R. Mukherjee	India	Numerical Relaxation of a 3D MHD Taylor–Woltjer State Subject to Abrupt Expansion
TH/P5-4	D. Sharma	India	ADITYA Up-Gradation Equilibrium Study
TH/P5-5	T. Moritaka	Japan	Gyrokinetic Modelling with an Extended Magnetic Equilibrium Including the Edge Region of Large Helical Device

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P5 *continued…*

Id	Presenter		Title
TH/P5-6	J. Kim	Korea, Rep. of	Effects of Magnetic Perturbations on Magnetic Field Stochastication During Edge Pedestal Collapse
TH/P5-7	Z. Lin	USA	Roles of RMP-Induced Changes of Radial Electric Fields in ELM Suppression
TH/P5-8	L. E. Sugiyama	USA	Endogenous Magnetic Reconnection and Associated Processes of Relevance to Fusion Burning Plasmas
TH/P5-9	R. Hager	USA	Gyrokinetic-MHD Coupled Simulation of RMP Plasma Interaction Reproduces Density Pump-Out Seen in the Tokamak Edge
TH/P5-10	F. M. Poli	USA	Effects of Microtearing Modes on the Evolution of Electron Temperature Profiles in High Collisionality NSTX Discharges
TH/P5-11	Y. Patil	India	Electromagnetic Analysis of APPEL Linear Device Magnets
TH/P5-12	M. J. Hole	Australia	The Effect of Pressure Anisotropy on Ballooning Modes in Tokamak Plasmas
TH/P5-13	G. Z. Hao	China, P. R.	Centrifugal Force Driven Low Frequency Modes in Spherical Tokamak
TH/P5-18	F. Liu	France	Nonlinear MHD Simulations of Quiescent H-Mode in ASDEX-Upgrade and ITER
TH/P5-19	S. Günter	Germany	NTM Excitation by Sawtooth Crashes and the Suppression of Their Onset by Resonant Magnetic Perturbation
TH/P5-21	D. Chandra	India	Simulation of the Internal Kink Mode in Visco-Resistive Regimes
TH/P5-22	P. Zanca	Italy	A Power-Balance Model of Density Limit in Fusion Plasmas
TH/P5-23	L. Pigatto	Italy	Resistive Wall Mode Physics and Control Challenges in JT-60SA High-β_N Scenarios
TH/P5-24	S. Inoue	Japan	Nonlinear Dynamics of Tearing Mode Driven by Static and Rotating External 3D Fields
TH/P5-25	M. Sato	Japan	Ion Kinetic Effects on MHD Instabilities in High-β LHD Plasmas
TH/P5-26	G. Y. Park	Korea, Rep. of	Comparative Simulations of the Plasma Response to RMPs During ELM-Crash Mitigated and Suppressed Phases in KSTAR
TH/P5-27	R. Coelho	Portugal	Plasma Equilibrium Reconstruction of JET Discharges Using the IMAS Modelling Infrastructure

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P5 *continued…*

Id	Presenter		Title
TH/P5-28	D. López-Bruna	Spain	Nonlinearly Saturated Ideal Magnetohydrodynamic Equilibrium States with Periodicity-Breaking in Stellarators
TH/P5-30	Y. Liu	USA	Role of NTV Particle Flux in Density Pumpout during ELM Control by RMP
TH/P5-31	L. J. Zheng	USA	Negative Triangularity Effects on Tokamak MHD Stability
TH/P5-32	A. Reiman	USA	Equilibrium Pressure-Driven Current in the Presence of a Small Magnetic Island: Singular Behaviour and Symmetry Effects
TH/P5-33	C. Ribeiro	Brazil	Advances on the High Field Ultralow Aspect Ratio Tokamak

FIP/2, MPT/1, SEE/1 In Vessel Components & Plasma Interface

Chair: Yogesh Saxena (India) *Main Hall* **(14:00 – 16:10)**

Time	Id	Presenter		Title
14:00	SEE/1-1	C. Grisolia	France	Tritiated Dust: The Impact on Tokamak Operation
14:20	FIP/2-1	J. Chen	China, P. R.	Progress in Developing ITER and DEMO First Wall Technologies at SWIP
14:40	FIP/2-2	T. R. Barrett	UK	Technologies for Plasma-Facing Wall Protection in EU DEMO
15:00	FIP/2-3	R. Lunsford	USA	Active Conditioning of ASDEX-Upgrade Tungsten PFCs through Boron Particulate Injection
15:20	FIP/2-4	D. Iglesias	UK	Advances in Predictive Thermo-Mechanical Modelling for the JET Divertor Experimental Interpretation, Improved Protection, and Reliable Operation
15:40	MPT/1-1	A. Kreter	Germany	Influence of Plasma Impurities on the Fuel Retention in Tungsten

FIP/3 DEMO & Advance Technology

Chair: Guang-Nan Luo (P. R. China) *Main Hall* **(16:40 – 18:45)**

Time	Id	Presenter		Title
16:40	FIP/3-1	G. Federici	Germany	Overview of the DEMO Design-Staged Approach in Europe
17:00	FIP/3-2	Y. Sakamoto	Japan	Development of Physics and Engineering Designs for Japan's DEMO Concept
17:20	FIP/3-3	G. M. Wallace	USA	Novel Radiofrequency Current Drive Systems for Fusion Plasma Sustainment on DIII-D
17:40	FIP/3-4	M. Kikuchi	Japan	Impact of High Field & High Confinement on L-Mode-Edge Negative Triangularity Tokamak (NTT) Reactor
18:00	FIP/3-5Ra	R. Maingi	USA	Amelioration of Plasma-Material Interactions and Improvement of Plasma Performance with a Flowing Liquid Li Limiter and Li Conditioning on EAST
	FIP/3-5Rb			Experiments on FTU with a Liquid Tin Limiter
18:20	FIP/3-6	R. J. Goldston	USA	Development of a Lithium Vapour Box Divertor for Controlled Plasma Detachment

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Main Hall **(14:00 – 18:45)**

Id	Presenter		Title
EX/5-1	K. Nagaoka	Japan	Transport Characteristics of Deuterium and Hydrogen Plasmas with Ion Internal Transport Barrier in LHD
EX/5-2	C. Chrystal	USA	Predicting the Toroidal Rotation Profile for ITER
EX/6-1	C. Paz-Soldan	USA	Advances in Runaway Electron Control and Model Validation for ITER
PPC/1-1	N. Hayashi	Japan	Predictive Integrated Modelling of Plasmas and their Operation Scenarios towards Exploitation of JT-60SA Experiment
TH/3-1	J. Garcia	France	First Principles and Integrated Modelling Achievements Towards Trustful Fusion Power Predictions for JET and ITER
TH/3-2	F. J. Casson	UK	Predictive Multichannel Flux-Driven Modelling to Optimize ICRH Tungsten Control in JET

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P6 *continued…*

Id	Presenter		Title
TH/4-1	J. R. Martín Solís	Spain	Runaway Electron Mitigation in ITER Disruptions by Injection of High-Z Impurities
TH/4-2	A. Matsuyama	Japan	Self-Consistent Runaway Beam Formation in 3D Magnetic Fields During Radiation-Driven Disruptions
TH/4-3	L. Carbajal	USA	Pitch Angle Dynamics and Synchrotron Emission of Runaway Electrons in Quiescent and Disrupted DIII-D Plasmas
TH/4-4	H. Strauss	USA	Asymmetric Wall Force Reduction in ITER and JET Disruptions
EX/P6-1	J. S. deGrassie	USA	DIII-D Shaping Demonstrates Correlation of Intrinsic Momentum with Energy
EX/P6-2	A. Diallo	USA	ELMs Onset Triggered by Mode Coupling Near Rational Surfaces in the Pedestal
EX/P6-3	B. A. Grierson	USA	Rotation Profile Hollowing in DIII-D Low-Torque Electron-Heated H-Mode Plasmas
EX/P6-4	F. M. Laggner	USA	The Universality of Inter-ELM Pedestal Fluctuations in AUG and DIII-D: Impacting the Edge Profile Structure by Clamping of the Gradients
EX/P6-5	S. Mordijck	USA	Particle Transport from the Bottom Up
EX/P6-6	M. E. Austin	USA	High Confinement in Negative Triangularity Discharges in DIII-D
EX/P6-8	L. F. Delgado-Aparicio	USA	Rotation-Induced Electrostatic-Potentials and Density Asymmetries in NSTX
EX/P6-9	M. V. Umansky	USA	Extending the Boundary Heat Flux Width Database to 1.3 Tesla Poloidal Magnetic Field in the Alcator C-Mod Tokamak
EX/P6-10	H. Y. Guo	USA	Development and First Experimental Tests of a Small Angle Slot Divertor on DIII-D
EX/P6-11	T. W. Petrie	USA	High Performance Double-Null Plasmas Under Radiating Divertor and Mantle Scenarios on DIII-D
EX/P6-12	A. W. Leonard	USA	Parallel Energy Transport in Detached DIII-D Divertor Plasmas
EX/P6-13	T. Abrams	USA	Inter vs. Intra-ELM Tungsten Erosion and Transport from the Divertor in DIII-D High-Performance H-Mode Discharges
EX/P6-14	M. E. Fenstermacher	USA	The Effect of RMP ELM Control for ITER on Pedestal Pressure Compared to EPED No-RMP Predictions

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P6 *continued…*

Id	Presenter		Title
EX/P6-15	A. G. McLean	USA	Quantification of Radiating Species in the DIII-D Divertor in the Transition to Detachment Using Extreme Ultraviolet Spectroscopy
EX/P6-16	E. A. Unterberg	USA	Measurements of High-Z Divertor Impurity Sourcing and Divertor Leakage Using Isotopic Tungsten Tracer Sources in DIII-D
EX/P6-17	D. M. Orlov	USA	Favourable Impact of RMP ELM Suppression on Divertor Heat Fluxes at ITER-like Conditions
EX/P6-18	E. T. Hinson	USA	Enhancement of Helium Exhaust During Suppression of Edge Localized Modes by Resonant Magnetic Perturbation Fields at DIII-D
EX/P6-19	T. M. Wilks	USA	Access Requirements for Stationary ELM-Suppressed Pedestals in DIII-D and C-Mod Plasmas
EX/P6-20	R. S. Granetz	USA	Machine Learning for Disruption Warning on Alcator C-Mod, DIII-D, and EAST Tokamaks
EX/P6-21	J. L. Barr	USA	Fast ITER-Relevant Low-Disruptivity Ramp-Downs in DIII-D and EAST
EX/P6-22	N. W. Eidietis	USA	Implementing a Finite-State Off-Normal and Fault Response System for Robust Disruption Avoidance in Tokamaks
EX/P6-23	J. Herfindal	USA	Injection of Multiple Shattered Pellets for Disruption Mitigation in DIII-D
EX/P6-24	M. W. Shafer	USA	Observation of Multiple Helicity Mode-Resonant Locking Leading to a Disruption on DIII-D
EX/P6-25	M. Okabayashi	USA	Critical Processes of Tearing Mode Entrainment in the Presence of a Static Error Field
EX/P6-26	S. A. Sabbagh	USA	Disruption Event Characterization and Forecasting in Tokamaks
EX/P6-28	S. G. Baek	USA	Observation of Efficient Lower Hybrid Current Drive at High Density on Alcator C-Mod
EX/P6-29	K. E. Thome	USA	High-Frequency Energetic Particle Driven Instabilities and their Implications for Burning Plasmas
EX/P6-30	B. Van Compernolle	USA	Fast Wave Experiments in LAPD in Support of Fusion

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P6 *continued…*

Id	Presenter		Title
EX/P6-32	M. Podestà	USA	Global Alfvén Eigenmode Stability Dependence on Fast-Ion Distribution Function
EX/P6-33	D. Kim	USA	Investigation of Fast Particle Redistribution Induced by Sawtooth Instability in NSTX-U
EX/P6-34	M. W. Bongard	USA	Advancing Local Helicity Injection for Nonsolenoidal Tokamak Startup
EX/P6-36	C. B. Forest	USA	Development of a High-Flux Fusion Neutron Source Using Recent Advances in Technology
EX/P6-37	Z. Lin	USA	First Simulations of Turbulent Transport in the Field-Reversed Configuration
EX/P6-38	B. A. Grierson	USA	Dynamic Neutral Beam Injection as a Mechanism for Plasma Control and an Actuator for Instability Drive
EX/P6-39	E. Schuster	USA	Physics-Model-Based Real-Time Optimization for the Development of Steady-State Scenarios at DIII-D
EX/P6-40	N. M. Ferraro	USA	Error Field Impact on Mode Locking and Divertor Heat Flux in NSTX-U
TH/P6-1	G. Q. Li	China, P. R.	Transport Simulation of EAST Long Pulse Discharge and High-β_N Discharge with Integrated Modelling
TH/P6-4	L. Wang	China, P. R.	Theory of Turbulence Driven Intrinsic Rotation and Current
TH/P6-5	T. Görler	Germany	En Route to High-Performance Discharges: Insights and Guidance from High-Realism Gyrokinetics
TH/P6-6	A. Bhattacharya	India	Application of the Semi-Implicit Numerical Method on the Radial Impurity Transport Equation and Determination of O^{4+} Emissivity with Two Separate PEC Databases
TH/P6-7	S. D. Pinches	ITER	Progress in the ITER Integrated Modelling Programme and the ITER Scenario Database
TH/P6-8	M. Nunami	Japan	Kinetic Simulation Studies on Multi-Ion-Species Plasma Transport in Helical Systems
TH/P6-9	E. Narita	Japan	Gyrokinetic Modelling of Turbulent Particle Fluxes towards Efficient Predictions of Density Profiles

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P6 *continued…*

Id	Presenter		Title
TH/P6-10	L. Qi	Korea, Rep. of	Nonlinear Gyrokinetic Analysis of Linear Ohmic Confinement to Saturated Ohmic Confinement Transition
TH/P6-12	D. López-Bruna	Spain	Flux-Surface Averaged Radial Transport in Toroidal Plasmas with Magnetic Islands
TH/P6-13	S. Buller	Sweden	Transport of Collisional Impurities with Flux-Surface Density Variation in Stellarator Plasmas
TH/P6-14	P. Strand	Sweden	Towards a Predictive Modelling Capacity for DT Plasmas: European Transport Simulator (ETS) Verification and Validation
TH/P6-15	B. Chatthong	Thailand	Ion and Electron Temperature Predictions Based on Thailand Tokamak Plasmas Using CRONOS Code
TH/P6-16	O. Meneghini	USA	Neural-Network Accelerated Coupled Core-Pedestal Simulations with Self-Consistent Transport of Impurities
TH/P6-17	W. X. Wang	USA	Self-Driven Current Generation in Turbulent Fusion Plasmas
TH/P6-19	P. W. Terry	USA	Scalings of Ion Temperature Gradient Turbulence and Transport
TH/P6-20	C.-S. Chang	USA	Total-f Gyrokinetic Turbulent-Neoclassical Simulation of Global Impurity Transport and its Effect on the Main-Plasma Confinement
TH/P6-21	M. D. J. Cole	USA	Confinement in Stellarators with the Global Gyrokinetic Code XGC
TH/P6-22	Z. H. Wang	China, P. R.	Physics of Fast Component of Deuterium Gas Jet Injection in Magnetized Plasmas
TH/P6-23	N. K. Bisai	India	Dynamics of Neon Ions after Neon Gas Seeding and Puffing into Tokamak Plasma
TH/P6-24	G. Telesca	Poland	Numerical Simulation of High Neutron Rate JET-ILW DD Pulses in View of Extension to DT Experiments
TH/P6-25	S. Sangaroon	Thailand	Parametric Study of the Impurity Profile in the Thailand Tokamak
TH/P6-26	S. Nowak	Italy	Analysis and Modelling of NTMs Dynamics in JET Discharges Using the European Transport Simulator (ETS) and Integrated Modelling Tools

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P6 *continued…*

Id	Presenter		Title
TH/P6-28	D. Mandal	India	Study of Evolution of Trapped Particle Undamped Coherent Structures: An Important Agent in Intermittent Plasma Turbulence and Anomalous Transport
TH/P6-29	H. Yamaguchi	Japan	Simulation Study of Electrostatic Potential Generated by NBI and its Effect on the Neoclassical Transport of Carbon Impurity Ions in LHD
TH/P6-30	J. J. Martinell	Mexico	Weak Turbulence Transport with Background Flows Using Mapping Techniques Including Finite Larmor Radius Effects

EX/7 and TH/5 Active ELM Control

Chair: Annika Ekedahl (France) *Main Hall* **(08:30 – 10:15)**

Time Id	Presenter		Title
08:30 EX/7-1	Y. In	Korea, Rep. of	Test of the ITER-Like RMP Configurations for ELM-Crash-Suppression on KSTAR
08:50 EX/7-2	Y. Sun	China, P. R.	Dynamic ELM and Divertor Control Using Mixed Toroidal Harmonic Resonant Magnetic Perturbations in DIII-D and EAST
09:10 EX/7-3	W. Suttrop	Germany	Experimental Conditions for Suppressing Edge Localized Modes by Magnetic Perturbations in ASDEX-Upgrade
09:30 EX/7-4	G. L. Xiao	China, P. R.	ELM Control Physics with Impurity Seeding and LHCD in the HL-2A Tokamak
09:50 TH/5-1	D. Chandra	India	A Nonlinear 2-Fluid Study of the Effect of Pellet Injection on ELM Dynamics

MPT/2, FNS/1, SEE/2 Materials, FNS, Environmental

Chair: Viacheslav Chernov (Russian Fed.) *Main Hall* **(10:45 – 12:30)**

Time Id	Presenter		Title
10:45 MPT/2-1	T. Nagasaka	Japan	High-Temperature Creep Properties of NIFS-HEAT-2 High-Purity Low-Activation Vanadium Alloy
11:05 MPT/2-2	R. Ding	China, P. R.	Model Validation on EAST and DIII-D Experiments towards Understanding of High-Z Material Erosion and Migration in a Mixed Materials Environment
11:25 MPT/2-3	P. N. Maya	India	Evaluation of Tungsten as Divertor Plasma-Facing Material: Results from Ion Irradiation Experiments and Computer Simulations
11:45 MPT/2-4	A. Ibarra	Spain	The European Approach to the Fusion-Like Neutron Source: The IFMIF-DONES Project
12:05 SEE/2-1	M. R. Gilbert	UK	Waste Implications from Minor Impurities in European DEMO Materials

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Main Hall **(08:30 – 12:30)**

Id	Presenter		Title
FIP/2-1	J. Chen	China, P. R.	Progress in Developing ITER and DEMO First Wall Technologies at SWIP
FIP/2-2	T. R. Barrett	UK	Technologies for Plasma-Facing Wall Protection in EU DEMO
FIP/2-3	R. Lunsford	USA	Active Conditioning of ASDEX-Upgrade Tungsten PFCs through Boron Particulate Injection
FIP/2-4	D. Iglesias	UK	Advances in Predictive Thermo-Mechanical Modelling for the JET Divertor Experimental Interpretation, Improved Protection, and Reliable Operation
FIP/3-1	G. Federici	Germany	Overview of the DEMO Design-Staged Approach in Europe
FIP/3-2	Y. Sakamoto	Japan	Development of Physics and Engineering Designs for Japan's DEMO Concept
FIP/P8-9	G. M. Wallace	USA	Novel Radiofrequency Current Drive Systems for Fusion Plasma Sustainment on DIII-D
FIP/3-4	M. Kikuchi	Japan	Impact of High Field & High Confinement on L-Mode-Edge Negative Triangularity Tokamak (NTT) Reactor
FIP/3-5Ra	R. Maingi	USA	Amelioration of Plasma-Material Interactions and Improvement of Plasma Performance with a Flowing Liquid Li Limiter and Li Conditioning on EAST
FIP/3-5Rb	G. Mazzitelli	Italy	Experiments on FTU with a Liquid Tin Limiter
FIP/3-6	R. J. Goldston	USA	Development of a Lithium Vapour Box Divertor for Controlled Plasma Detachment
MPT/1-1	A. Kreter	Germany	Influence of Plasma Impurities on the Fuel Retention in Tungsten
MPT/2-1	T. Nagasaka	Japan	High-Temperature Creep Properties of NIFS-HEAT-2 High-Purity Low-Activation Vanadium Alloy
MPT/2-2	R. Ding	China, P. R.	Model Validation on EAST and DIII-D Experiments towards Understanding of High-Z Material Erosion and Migration in a Mixed Materials Environment

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P7 *continued…*

Id	Presenter		Title
MPT/2-3	P. N. Maya	India	Evaluation of Tungsten as Divertor Plasma-Facing Material: Results from Ion Irradiation Experiments and Computer Simulations
MPT/2-4	A. Ibarra	Spain	The European Approach to the Fusion-Like Neutron Source: The IFMIF-DONES Project
SEE/1-1	C. Grisolia	France	Tritiated Dust: Their Impact on Tokamak Operation
SEE/2-1	M. R. Gilbert	UK	Waste Implications from Minor Impurities in European DEMO Materials
SEE/3-1Ra	S. Konishi	Japan	Future Possibility of Carbon Sequestration by Biomass-Fusion Hybrid Systems
SEE/3-1Rb	S. Takeda	Japan	Economic Performance of Fusion Power Plant on Future Deregulated Electricity Market
SEE/3-1Rc	H. Nam	Japan	Techno-Economic Analysis of Biodiesel and Hydrogen Production via Fusion-Biomass Hybrid Model
EX/P7-1	G. Verdoolaege	Belgium	First Analysis of the Updated ITPA Global H-Mode Confinement Database
EX/P7-3	J. Jo	Korea, Rep. of	Time Resolved Triton Burnup Measurements Using the Scintillating Fibre Detector on KSTAR
EX/P7-4	S. G. Lee	Korea, Rep. of	Intrinsic Toroidal Rotation for Ohmic L-Mode Plasmas in KSTAR
EX/P7-5	S.-W. Yoon	Korea, Rep. of	The Effect of Electron Cyclotron Heating on Thermal and Fast-Ions Transport in High-β-Poloidal Discharges at KSTAR
EX/P7-7	J.-S. Park	Korea, Rep. of	Characteristics of Asymmetric (Low-Field-Side and High-Field Side) Divertor Detachment in KSTAR L-Mode Plasmas
EX/P7-8	J. J. Jang	Korea, Rep. of	ELM Suppression and Internal Transport Barrier Formation by Krypton Seeding in KSTAR Plasmas
EX/P7-9	I. Song	Korea, Rep. of	Experimental Observation and Modelling of High-Z Impurity Transport by Tungsten Powder Injection in KSTAR Plasmas
EX/P7-10	S.-H. Hong	Korea, Rep. of	Observation of Heat Load on the Castellated Tungsten Block by Back-Scattered Particles from Intentionally Misaligned Protruding Edge

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P7 *continued…*

Id	Presenter		Title
EX/P7-11	C. Xiao	Canada	Effects of Lithium Coating of Chamber Wall on the STOR-M Tokamak Discharges
EX/P7-12	M. Lehnen	ITER	R&D for Reliable Disruption Mitigation in ITER
EX/P7-13	J. Lee	Korea, Rep. of	Bifurcation of Perpendicular Rotation and Field Penetration at the Transition to RMP-Induced ELM-Crash Suppression
EX/P7-14	J. Kim	Korea, Rep. of	Evolution of Locked Mode Under the Existence of Nonaxisymmetric Fields in KSTAR
EX/P7-15	Y. M. Jeon	Korea, Rep. of	Experimental Observations of the Plasma Shape Effect on the RMP-ELM Coupling for Optimization of the KSTAR ELM-Crash Control
EX/P7-16	Y.-S. Park	USA	Stability, Transport, and Active MHD Mode Control Analysis of KSTAR High Performance Plasmas Supporting Disruption Avoidance
EX/P7-17	M. Inomoto	Japan	Effects of Reconnection Downstream Conditions on Electron Parallel Acceleration during Merging Start-Up of Spherical Tokamak
EX/P7-18	V. I. Vargas-Blanco	Costa Rica	Conversion of Electrostatic Bernstein Waves in the SCR-1 Stellarator Using a Full Wave Code
EX/P7-19	S.-H. Kim	Korea, Rep. of	Power Coupling of Lower Hybrid Fast Wave in VEST
EX/P7-20	T. Asai	Japan	Collisional Merging of a Field-Reversed Configuration in the FAT-CM Device
EX/P7-21	H. Y. Lee	Korea, Rep. of	Solenoid-Free Start-Up Utilizing Outer PF Coils with the Help of EBW Preionization and Change of External Inductance in VEST
EX/P7-22	J.-H. Yang	Korea, Rep. of	Internal Structure of MHD Fluctuations for Various Current Density Profiles during Current Rise Phase of Ohmic Discharge in VEST
EX/P7-23	A. Loarte	ITER	Advances in Modelling of Plasma Pedestal Behaviour and ELM Control in ITER Reference Plasma Scenarios
EX/P7-24	H. Anand	ITER	Implementation of 3D Effects of the ITER Plasma-Facing Components in a 2D Real-Time Model-Based Approach for Wall Heat Flux Control on ITER

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P7 *continued…*

Id	Presenter		Title
EX/P7-25	F. Köchl	UK	Optimizing the ITER 15 MA DT Baseline Scenario by Exploiting a Self-Consistent Free-Boundary Core-Edge-SOL Workflow in IMAS
EX/P7-26	E. Schuster	USA	Robust Burn Control in ITER Under Deuterium-Tritium Concentration Variations in the Fuelling Lines
EX/P7-27	F. M. Poli	USA	The ITER Plasma Current Termination Phase: Physics Constraints on Control
FIP/P7-1	M. Siccinio	Germany	Development of a Plasma Scenario for the EU-DEMO: Current Activities and Perspectives
FIP/P7-2	H. Lux	Germany	Implications of Uncertainties on the European DEMO Design
FIP/P7-3	S. S. Ananyev	Russian Fed.	Development of DEMO-FNS Fuelling Systems and Modelling Hydrogen Isotopes Distribution via "FC-FNS" Simulation Code
FIP/P7-4	Y. Takase	Japan	Development of Capacitively-Coupled Comb-Line Antennas for Current Drive in Tokamaks
FIP/P7-5	L. Zani	France	Progresses at CEA on EU DEMO Reactor Cryomagnetic System Design Activities and Associated R&D
FIP/P7-6	B. K. Yadav	India	Design Optimization of Helium Cooling Systems for Indian LLCB TBM
FIP/P7-7	Y. S. Shpanskiy	Russian Fed.	Progress in Design of DEMO-FNS Hybrid Facility
FIP/P7-8	V. L. Tanna	India	SST-1 Cryogenic Requirements and the Way Forward
FIP/P7-9	U. Prasad	India	Thermal-Hydraulic Characteristics Study of Superconducting Magnets of SST-1
FIP/P7-10	G. Mahesuria	India	Pump Characterization of 80 K Liquid Nitrogen Booster System for SST-1
FIP/P7-12	G. Gantenbein	Germany	Overview of Recent Gyrotron R&D towards DEMO within EUROfusion Work Package Heating and Current Drive
FIP/P7-13	L. Savoldi	Italy	Assessment and Optimization of the Cavity Thermal Performance for the European Continuous Wave Gyrotrons
FIP/P7-14	A. Garg	India	Operational Results and Troubleshooting in Current Feeder System for SST-1
FIP/P7-15	D. B. Gin	Russian Fed.	Recent Progress in Developing Gamma Spectrometer in ITER

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P7 *continued…*

Id	Presenter		Title
FIP/P7-16	R. Sugandhi	India	Timing and Synchronization for Integrated Operation of Large Volume Plasma Device
FIP/P7-17	V. G. Devi	India	Design and Thermal Fluid Structure Interaction Analysis of Liquid Nitrogen Cryostat of Cryogenic Molecular Sieve Bed Adsorber for Hydrogen Isotopes Removal System
FIP/P7-19	S. Dutta	India	Error Field Experiment and Analysis in SST-1
FIP/P7-20	D. Christian	India	Maintenance Experience of 315 kW Electrical Motor of Helium Screw Compressor in 1.3 kW Helium Liquefier
FIP/P7-21	A. Tomar	India	Thermo-Structural and Heat Load Analysis of SST-1 Superconducting Coils
FIP/P7-22	A. Shrivastava	India	Thermal Diffusivity Measurement of Functional & Structural Materials for Fusion Blanket Application
FIP/P7-24	N. Rastogi	India	Development of a Prototype Collaborative Robot for Fusion Remote Handling Applications
FIP/P7-25	B. R. Doshi	India	Design of the TF/PF Bus Bar Layout and its Connections with Current Feeder System of SST-1 Tokamak
FIP/P7-26	S. Roy	India	Preventive Measures to Avoid Electrical Arcing Incidences in SST-1 PF Current Leads
FIP/P7-27	H. Chen	China, P. R.	Model Development and Electromagnetic Analysis of Vertical Displacement Event for CFETR Helium Cooled Solid Blanket
FIP/P7-28	P. Prajapati	India	Key Considerations in the Power Extraction from Fusion Reactors
FIP/P7-29	D. Chen	China, P. R.	Development and Experiment of PbLi Facilities for Fusion Nuclear Technology
FIP/P7-30	J. Mora-Meléndez	Costa Rica	Implementation of the Spherical Tokamak MEDUSA-CR: Stage 1
FIP/P7-33	O. Crofts	UK	Early Definition of the Maintenance Plan Is Essential to Achieve an Economic EU DEMO
FIP/P7-34	V. B. Minaev	Russian Fed.	The Influence of Toroidal Magnetic Field Growth on Plasma Performance in the Spherical Tokamak Globus-M/-M2
FIP/P7-35	K. Kizu	Japan	Progress in Design and Fabrication of Current and Helium Feeding System for JT-60SA Superconducting Coils

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P7 *continued…*

Id	Presenter		Title
FIP/P7-36	S. Binwal	India	Noninvasive Plasma Density Measurement in a 13.56 MHz Magnetized Capacitive Coupled RF Discharge
FIP/P7-37	Y. Shibama	Japan	Advanced Assembly Technology of the Superconducting Coils in JT-60SA Tokamak
FIP/P7-38	T. Brown	USA	A Toroidal Confinement Facility Study and Eventual Experimental Device to Investigate a Range of Liquid Metal Divertor and First-Wall Concepts
FIP/P7-39	T. Goto	Japan	Conceptual Design of a Compact Helical Fusion Reactor FFHR-c1 for the Early Demonstration of a Year-Long Electric Power Generation
FIP/P7-40	V. Antoni	Italy	Negative Ion Beam Source Physics as a Complex System: Identification of Main Processes and Key Interdependence
FIP/P7-42	J. Figueiredo	Portugal	JET Upgraded Diagnostic Capabilities and Scientific Exploitation in Support of Deuterium-Tritium Operation
TH/P7-1	D. Zarzoso	France	Poloidal Flows, Asymmetries and Multiscale Organization in Interplaying Core-Edge-SOL Turbulent Plasmas
TH/P7-2	R. J. Buttery	USA	Integrated Modelling of Core, Edge Pedestal and Scrape-Off-Layer for High-β_N Steady-State Scenarios on DIII-D
TH/P7-3	M. Y. Ye	China, P. R.	Simulation Study of the Impurity Radiation in the Quasi-Snowflake Divertor with Ne Seeding for CFETR
TH/P7-4	A. H. Nielsen	Denmark	Synthetic Edge and SOL Diagnostics: A Bridge between Experiments and Theory
TH/P7-5	M. Wischmeier	Germany	The Physics Basis for a Solution to the Power and Particle Exhaust Problem of a Next Step Device
TH/P7-6	D. Sharma	India	The Scrape-Off Layer Plasma Transport Physics Simulation Activity for Indian Tokamaks ADITYA and SST-1
TH/P7-7	V. Pericoli Ridolfini	India	Comparative Analysis of the SOL Properties for the Various Magnetic Configurations Proposed for the DEMO Divertor
TH/P7-8	N. Shukla	India	Electron Impact Excitation of W^{40+} to W^{43+} Ions: Cross Section and Polarization

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P7 *continued…*

Id	Presenter		Title
TH/P7-9	B. P. Sahoo	India	Plasma Transport in Toroidally Discontinuous Limiter Generated 3D SOL Configurations of ADITYA Tokamak
TH/P7-10	R. Zanino	Italy	Self-Consistent Modelling of a Liquid Metal Pool-Type Divertor
TH/P7-11	S. Togo	Japan	SOL/Divertor Plasma Simulation of Diverging Magnetic Field Configurations for Advanced Divertors
TH/P7-12	H. Hasegawa	Japan	Ion Inertial Effects on 3D Filament Dynamics
TH/P7-13	R. Khanal	Nepal	Velocity Profile and Modulation Frequency of Ions in a Magnetized Plasma Sheath Using Kinetic Trajectory Simulation Method
TH/P7-15	J. P. S. Bizarro	Portugal	Exact Conservative Solutions of Fluid Models for the Scrape-Off Layer as the Ancestors of Blobs?
TH/P7-17	I. B. Kupriyanov	Russian Fed.	Simulation of Beryllium Erosion and Surface Damage Under ITER-Like Transient Plasma Heat Loads
TH/P7-18	H. Reimerdes	Switzerland	Assessment of Alternative Divertor Configurations as an Exhaust Solution for DEMO
TH/P7-20	M. Wigram	UK	Performance Assessment of Tightly-Baffled Long-Leg Divertor Geometries in the ARC Reactor Concept
TH/P7-21	X. Q. Xu	USA	Simulations of Tokamak Boundary Plasma Turbulent Transport
TH/P7-22	C.-S. Chang	USA	Wide Divertor Heat-Flux Width in ITER from Self-Organization between the Neoclassical and Turbulent Transports across the Separatrix Surface
TH/P7-23	A. Hakim	USA	Continuum Gyrokinetic Simulations of NSTX SOL Turbulence with Sheath-Limited Model Geometries
TH/P7-24	M. A. Dorf	USA	Simulation of Cross-Separatrix Edge Plasma Transport with the Continuum Gyrokinetic Code COGENT
TH/P7-25	J. M. Canik	USA	Multiphysics Modelling of the Long-Term Evolution of Plasma-Exposed Surfaces
TH/P7-26	R. M. Churchill	USA	Pressure Balance in a Low Collisionality Tokamak Scrape-Off Layer

EX/8, PPC/2, TH/6 Heating, Current Drive & Steady State

Chair: Kenkichi Ushigusa (Japan) *Main Hall* **(14:00 – 16:10)**

Time Id	Presenter		Title
14:00 TH/6-1	M. Schneider	France	Modelling Third Field Operation in the ITER Prefusion Power Operation Phase
14:20 TH/6-2	E. M. Bass	USA	Predictions of α-Particle and Neutral-Beam Heating and Transport in ITER Scenarios
14:40 PPC/2-1	T. C. Luce	ITER	Exploring an Alternate Approach to $Q = 10$ in ITER
15:00 TH/6-3	M. Weiland	Germany	Real-Time Simulation of the NBI Fast-Ion Distribution
15:20 EX/8-1	Y. O. Kazakov	Belgium	Recent Advances in ICRF Heating of Mixture Plasmas: Survey of JET and AUG Experiments and Extrapolation to JET-DT and ITER
15:40 EX/8-2	G. M. Wallace	USA	Experimental Evidence of Lower Hybrid Wave Scattering in Alcator C-Mod Due to Scrape Off Layer Density Fluctuations

EX/9 and TH/7 Divertor & Exhaust Physics

Chair: Choong-Seok Chang (USA) *Main Hall* **(16:40 – 18:45)**

Time Id	Presenter		Title
16:40 EX/9-1	T. Sunn Pedersen	Germany	First Divertor Physics Studies in Wendelstein 7-X
17:00 EX/9-2	F. Effenberg	USA	Demonstration of Power Exhaust Control by Impurity Seeding in the Island Divertor at Wendelstein 7-X
17:20 EX/9-3	A. E. Järvinen	USA	Progress in DIII-D Towards Validating Divertor Power Exhaust Predictions
17:40 TH/7-1	F. Militello	UK	Predicting Scrape-Off Layer Profiles and Filamentary Transport for Reactor Relevant Devices
18:00 TH/7-2	M. V. Umansky	USA	Study of Passively Stable, Fully-Detached Divertor Plasma Regimes Attained in Innovative Long-Legged Divertor Configurations
18:20 EX/9-4	S. Brezinsek	Germany	Erosion, Screening, and Migration of Tungsten in JET Equipped with Tungsten Divertor

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Main Hall **(14:00 – 18:45)**

Id	Presenter		Title
EX/7-1	Y. In	Korea, Rep. of	Test of the ITER-Like RMP Configurations for ELM-Crash-Suppression on KSTAR
EX/7-2	Y. Sun	China, P. R.	Dynamic ELM and Divertor Control Using Mixed Toroidal Harmonic Resonant Magnetic Perturbations in DIII-D and EAST
EX/7-3	W. Suttrop	Germany	Experimental Conditions for Suppressing Edge Localized Modes by Magnetic Perturbations in ASDEX-Upgrade
EX/7-4	G. L. Xiao	China, P. R.	ELM Control Physics with Impurity Seeding and LHCD in the HL-2A Tokamak
EX/8-1	Y. O. Kazakov	Belgium	Recent Advances in ICRF Heating of Mixture Plasmas: Survey of JET and AUG Experiments and Extrapolation to JET-DT and ITER
EX/8-2	G. M. Wallace	USA	Experimental Evidence of Lower Hybrid Wave Scattering in Alcator C-Mod Due to Scrape Off Layer Density Fluctuations
EX/9-1	T. Sunn Pedersen	Germany	First Divertor Physics Studies in Wendelstein 7-X
EX/9-2	F. Effenberg	USA	Demonstration of Power Exhaust Control by Impurity Seeding in the Island Divertor at Wendelstein 7-X
EX/9-3	A. E. Järvinen	USA	Progress in DIII-D Towards Validating Divertor Power Exhaust Predictions
EX/9-4	S. Brezinsek	Germany	Erosion, Screening, and Migration of Tungsten in JET Equipped with Tungsten Divertor
EX/10-1	K. Ida	Japan	Isotope Effect on Impurity and Bulk Ion Particle Transport in the Large Helical Device
EX/10-2	V. A. Vershkov	Russian Fed.	3D Structure of Density Fluctuations in T-10 Tokamak and New Approach for Current Profile Estimation
EX/10-3	P. Rodriguez-Fernandez	USA	Explaining Cold-Pulse Dynamics in Tokamak Plasmas Using Local Turbulent Transport Models
EX/11-1	H. Raj	India	Origin of Harmonics of Drift Tearing Mode in ADITYA Tokamak
EX/11-2	M. J. Choi	Korea, Rep. of	Effect of Multiscale Interaction between an $m/n = 2/1$ Mode and Microinstabilities on Transport of KSTAR Plasmas

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Id	Presenter		Title
PPC/2-1	T. C. Luce	ITER	Exploring an Alternate Approach to $Q = 10$ in ITER
TH/5-1	D. Chandra	India	A Nonlinear 2-Fluid Study of the Effect of Pellet Injection on ELM Dynamics
TH/6-1	M. Schneider	ITER	Modelling Third Field Operation in the ITER Prefusion Power Operation Phase
TH/6-2	E. M. Bass	USA	Predictions of α-Particle and Neutral-Beam Heating and Transport in ITER Scenarios
TH/6-3	M. Weiland	Germany	Real-Time Simulation of the NBI Fast-Ion Distribution
TH/7-1	F. Militello	UK	Predicting Scrape-Off Layer Profiles and Filamentary Transport for Reactor Relevant Devices
TH/7-2	M. V. Umansky	USA	Study of Passively Stable, Fully-Detached Divertor Plasma Regimes Attained in Innovative Long-Legged Divertor Configurations
TH/8-1	J.-M. Kwon	Korea, Rep. of	Gyrokinetic XGC1 Simulation Study of Magnetic Island Effects on Neoclassical and Turbulence Physics in a KSTAR Plasma
TH/8-2	A. B. Altukhov	Russian Fed.	Benchmarking of Full-f Global Gyrokinetic Modelling Results against the FT-2 Tokamak Doppler Reflectometry Data Using Synthetic Diagnostics
EX/P8-1	A. Kappatou	Germany	Energy Confinement and Performance of Pure Helium Plasmas and Helium Seeded Deuterium Plasmas
EX/P8-2	M. G. Dunne	Germany	Impact of Impurity Seeding on Pedestal Structure in ASDEX-Upgrade and Alcator C-Mod
EX/P8-3	F. Ryter	Germany	Heat Transport Driven by the ITG and TEM Instabilities in the ASDEX-Upgrade Tokamak
EX/P8-4	T. Pütterich	Germany	The ITER Baseline Scenario Investigated at ASDEX-Upgrade
EX/P8-5	E. Viezzer	Spain	ELM-Induced Energy and Momentum Transport in ASDEX-Upgrade
EX/P8-6	L. Marrelli	Italy	From RFX-Mod to RFX-Mod2: Perspectives of the Reversed Field Pinch Configuration
EX/P8-7	R. Cavazzana	Italy	Challenges and Solutions in the Design of RFX-Mod2, a Multiconfiguration Magnetic Confinement Experimental Device

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Id	Presenter		Title
EX/P8-8	S. A. Bozhenkov	Germany	High Density and High Performance Operation with Pellet Injection in W7-X
EX/P8-9	O. Grulke	Germany	Plasma Dynamics and Transport Studies in Wendelstein 7-X
EX/P8-11	C. Silva	Portugal	IST Contributions to the ASDEX-Upgrade Edge and Divertor Physics Using Microwave Reflectometry
EX/P8-12	B. A. Unterberg	Germany	Characterization of Advanced Concepts for First Wall Materials by Plasma Exposure in the Linear Plasma Device PSI-2
EX/P8-13	N. Vianello	Italy	SOL Transport and Filamentary Dynamics in High Density Tokamak Regimes
EX/P8-14	P. Zanca	Italy	Helical Plasma-Wall Interaction in the RFX-Mod: Effects of High-n Mode Locking
EX/P8-15	S. C. Liu	Germany	The Effects of Magnetic Topology on the SOL Island Structure and Turbulence Transport in the First Divertor Plasma Operation of W7-X
EX/P8-16	M. W. Jakubowski	Germany	3D Heat and Particle Fluxes in Wendelstein 7-X
EX/P8-17	R. Brakel	Germany	Strategy and Optimization of Wall Conditioning at the Wendelstein 7-X Stellarator
EX/P8-18	C. Killer	Germany	Characterization of the W7-X Scrape-Off Layer Using the Multipurpose Manipulator
EX/P8-19	J. D. Lore	USA	Measurement and Modelling of Magnetic Configurations to Mimic Overload Scenarios in the W7-X Stellarator
EX/P8-20	M. Willensdorfer	Germany	Impact of the 3D Geometry from Nonaxisymmetric Magnetic Perturbations on the Local Edge Stability in ASDEX-Upgrade
EX/P8-21	V. Igochine	Germany	Seeding of Tearing Modes by Internal Crash Events in ASDEX-Upgrade and DIII-D Tokamaks
EX/P8-22	L. Frassinetti	Sweden	Role of the Pressure Position on the Pedestal Stability in AUG, JET-ILW and TCV in Deuterium and Hydrogen Plasmas and Implications for ITER
EX/P8-23	J.-M. Noterdaeme	Germany	Ion Cyclotron Range of Frequency Power: Progress in Operation and Understanding for Experiments with Metallic Walls

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Id	Presenter		Title
EX/P8-24	B. Geiger	Germany	Fast-Ion Confinement in Low Collisionality Discharges at ASDEX-Upgrade and TCV
EX/P8-25	D. Rittich	Germany	Quantification of Neutral Beam Driven Current and the Effect of Radial Fast-Ion Transport in ASDEX-Upgrade
EX/P8-26	J. Galdon-Quiroga	Spain	Impact of an Edge Resonant Transport Layer on Fast-Ion Confinement in the ASDEX-Upgrade Tokamak
EX/P8-27	J. Ongena	Belgium	Preparing the ICRH System for the Wendelstein 7-X Stellarator
EX/P8-28	H. P. Laqua	Germany	On a Path to Steady-State High-Performance Operation in W7-X: Heating, Current Drive and Fuelling Experiments with High Power ECRH
EX/P8-29	R. Majeski	USA	The LTX-β Research Programme and First Results
EX/P8-30	A. Dinklage	Germany	Plasma Termination by Excess Fuel and Impurities in TJ-II, LHD and W7-X
FIP/P8-1	R. Patel	India	Installation and Commissioning of 80 K Liquid Nitrogen Booster System
FIP/P8-2	R. C. O'Neill	USA	High Power Helicon Antenna Design for DIII-D
FIP/P8-3	C. K. Gupta	India	Implementation of Synchronous Reference Frame Theory Based Shunt Active Power Filter Using DSP Controller
FIP/P8-4	J. Patel	India	Operation and Control of 42 GHz Gyrotron System in ECRH
FIP/P8-5	K. Mohan	India	Design and Development of Control Grid Power Supply for RF Amplifier
FIP/P8-6	A. Fasoli	Switzerland	TCV Heating and Divertor Upgrades
FIP/P8-7	J. Kumar	India	Design and Simulation of Circular Waveguide Elbows Applicable in High Power Microwave Coupling to Plasma
FIP/P8-8	M. Patel	India	Development of Solid State Power Amplifier for ICH & CD RF Source
FIP/P8-9	R. Kumar	India	RT Amplitude Control Loop: Testing of R&D ICRF Source at High Power
FIP/P8-10	J. C. Patel	India	Mechanical Engineering Aspects for Overhauling of Helium Compressor and Heavy Duty Electrical Motors of 1.3 kW Helium Refrigerator/Liquefier System
FIP/P8-11	R. Ragona	Belgium	A Travelling Wave Array System as Solution for the ICRF Heating of DEMO

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Id	Presenter		Title
FIP/P8-12	R. Sharma	India	Development of Indigenous Electrical Insulation Breaks for Superconducting Magnets of Fusion Devices
FIP/P8-13	P. Y. Li	China, P. R.	Recent Progress of ITER Magnet Supports Package in SWIP
FIP/P8-14	U. Fischer	Germany	Nuclear Design Issues of a Stellarator Fusion Power Plant with Breeder Blanket in Comparison to Tokamaks
FIP/P8-15	M. Ghate	India	Numerical Investigations towards Manufacturing of High Current Carrying Superconducting CICC
FIP/P8-16	A. Jha	India	Development of Wideband Amplifier in ITER ICRF Range
FIP/P8-17	M. Bandyopadhyay	India	Development of Various Diagnostics for NNBI Programme in IPR
FIP/P8-18	R. K. Buddu	India	Studies of Ultrasonic and Phased Array Inspection NDT Techniques on High Thick SS-316L Welded Joint Mock-Ups of Fusion Reactor Components Fabrication Applications
FIP/P8-19	R. Bahl	India	Simulation Studies for Optimization of 60 MHz Rod-Type Radiofrequency Quadrupole Accelerator Design at IPR
FIP/P8-20	H. K. Patel	India	Manufacturing Technologies for UHV Compatible 10 MW/m^2 High Heat Flux Components for Application in Fusion Devices
FIP/P8-22	T. K. Sharma	India	Development and Validation of Cryostat Finite Element Model with Unique FE Method
FIP/P8-23	A. Patel	India	Characterization of Argon Plasma in a Multiline Cusp Magnetic Field: Towards a Favourable Source for NBI System
FIP/P8-24	Z. Shaikh	India	A Versatile Multicusp Plasma Device for Confining Contact Ionized Alkali Ions: Source for the Experimental Studies
FIP/P8-25	M. Sharma	India	Evolution and Implementation of Lossless Data Acquisition for Steady State Tokamak
FIP/P8-26	B. K. Shukla	India	Technology Developments for ECRH System
FIP/P8-29	B. Chektybayev	Kazakhstan	Concept of a New Approach in Thermographic Measurements for Plasma-Wall Interaction Studies on KTM Tokamak

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Id	Presenter		Title
TH/P8-1	K. Hallatschek	Germany	Highly Collisional Two-Fluid and Gyrokinetic Simulations of Tokamak Edge Turbulence and the Transition between Kinetic and Fluid Regime
TH/P8-2	A. Y. Aydemir	Korea, Rep. of	Effect of Poloidal Density Asymmetries on Shear Flows and Radial Electric Field at the Plasma Edge
TH/P8-3	R. Singh	Korea, Rep. of	Multiscale Interaction between Ballooning Mode and Electron-Scale Turbulence and the Mesoscale Structure Formation in the Edge Pedestal
TH/P8-4	J. Kim	Korea, Rep. of	Correlation Analysis Based Magnetic Kubo Number Estimation during Pedestal Collapse in BOUT++ Simulation
TH/P8-5	R. Dey	India	Studies of the Gas Puff Effect on Edge Plasma of ADITYA Tokamak Using Coupled DEGAS2-UEDGE Code
TH/P8-6	A. Wisitsorasak	Thailand	Predictive Simulations of Core-Edge Plasma for Tokamak Plasma Using BALDUR Code
TH/P8-7	J. Chowdhury	USA	Gyrokinetic Neoclassical Study of the Effect of the X-Point Height on $E \times B$ Flow Structure in an H-Mode Edge Plasma
TH/P8-8	V. K. Bandaru	Germany	Nonlinear Interaction of Runaway Electrons with Resistive MHD Modes in an ITER VDE
TH/P8-9	I. Bandyopadhyay	India	Simulations of Plasma Disruptions in ITER due to Material Ingress
TH/P8-10	N. M. Ferraro	USA	Nonlinear 3D Simulations of Vertical Displacement Events in Tokamaks
TH/P8-12	G. Q. Dong	China, P. R.	Nonlinear Interplay between Edge Localized Infernal Mode and Plasma Flow
TH/P8-13	Y. Li	China, P. R.	Nonlinear Turbulent Parallel Momentum Transport due to Blobs
TH/P8-14	Y. Peysson	France	Modelling Runaway Electrons Dynamics in Tokamak Plasmas: Progresses and Challenges
TH/P8-15	G. I. Pokol	Hungary	Runaway Electron Modelling in the ETS Self-Consistent Core Transport Simulator
TH/P8-16	C. Liu	USA	Energy Loss and Pitch Angle Scattering of Runaway Electrons due to Kinetic Instabilities
TH/P8-17	D. A. Spong	USA	Interactions of Runaway Electrons with Alfvén and Whistler Waves

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Id	Presenter		Title
TH/P8-18	R. W. Harvey	USA	Time-Dependent Runaway Simulations: Ampére–Faraday Equations Implemented in CQL3D
TH/P8-19	D. del-Castillo-Negrete	USA	Integrated Simulation of Runaway Electrons: A Backward Monte Carlo Approach for a Fluid-Kinetic Self-Consistent Coupling

EX/10 and TH/8 Transport

Chair: Yasuaki Kishimoto (Japan) *Main Hall* **(08:30 – 10:15)**

Time	Id	Presenter		Title
08:30	EX/10-1	K. Ida	Japan	Isotope Effect on Impurity and Bulk Ion Particle Transport in the Large Helical Device
08:50	EX/10-2	V. A. Vershkov	Russian Fed.	3D Structure of Density Fluctuations in T-10 Tokamak and New Approach for Current Profile Estimation
09:10	TH/8-1	J.-M. Kwon	Korea, Rep. of	Gyrokinetic XGC1 Simulation Study of Magnetic Island Effects on Neoclassical and Turbulence Physics in a KSTAR Plasma
09:30	EX/10-3	P. Rodriguez-Fernandez	USA	Explaining Cold-Pulse Dynamics in Tokamak Plasmas Using Local Turbulent Transport Models
09:50	TH/8-2	A. B. Altukhov	Russian Fed.	Benchmarking of Full-f Global Gyrokinetic Modelling Results against the FT-2 Tokamak Doppler Reflectometry Data Using Synthetic Diagnostics

EX/11, SEE/3, PD Stability, Environmental, and PD

Chair: Matthew Hole (Australia) *Main Hall* **(10:45 – 12:30)**

Time	Id	Presenter		Title
10:45	EX/11-1	H. Raj	India	Origin of Harmonics of Drift Tearing Mode in ADITYA Tokamak
11:05	EX/11-2	M. J. Choi	Korea, Rep. of	Effect of Multiscale Interaction between an $m/n = 2/1$ Mode and Microinstabilities on Transport of KSTAR Plasmas
11:25	SEE/3-1Ra	S. Konishi	Japan	Future Possibility of Carbon Sequestration by Biomass-Fusion Hybrid Systems
	SEE/3-1Rb			Economic Performance of Fusion Power Plant on Future Deregulated Electricity Market
	SEE/3-1Rc			Techno-Economic Analysis of Biodiesel and Hydrogen Production via Fusion-Biomass Hybrid Model
11:45	PD/1-1	TBA	—	Post Deadline Oral #1
12:05	PD/1-2	TBA	—	Post Deadline Oral #2

S/1 Summary 1

Chair: Elizabeth Surrey (UK) *Main Hall* **(14:00 – 16:00)**

Time Id	Presenter		Title
14:00 S/1-NF	R. Hawryluk	IAEA	The Nuclear Fusion Prize
	S. J. Le Masurier	IAEA	
14:30 S/1-1	D. J. Campbell	ITER	Summary EXC, EXS & PPC
15:00 S/1-2	K. Ida	Japan	Summary EXD, EXW & ICC
15:30 S/1-3	R. Galvao	Brazil	Summary Magnetic Confinement Theory

S/2 Summary 2

Chair: Boris Kuteev (Russian Fed.) *Main Hall* **(16:30 – 18:00)**

Time Id	Presenter		Title
16:30 S/2-1	B. P. Radha	USA	Summary Inertial Fusion Experiments and Theory
17:00 S/2-2	T. Inoue	Japan	Summary FIP, FNS, MPT & SEE
17:30 S/2-3	IAEA Representative	IAEA	Closing Address
17:50 S/2-4	Host Country Representative	India	Conference Closing

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