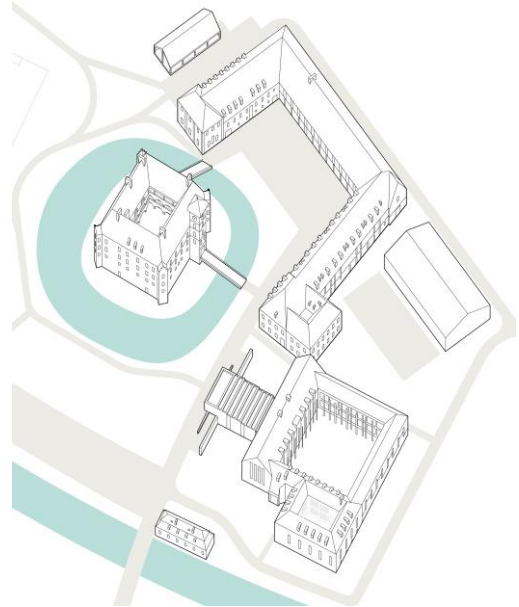


RFPPC2025

25th Topical Conference on Radio-Frequency Power in Plasmas



**May 19 - 22, 2025,
Schloss Hohenkammer, Germany**



**Organized by:
Max Planck Institute for Plasma Physics, Garching,
Germany**



**MAX-PLANCK-INSTITUT
FÜR PLASMAPHYSIK**

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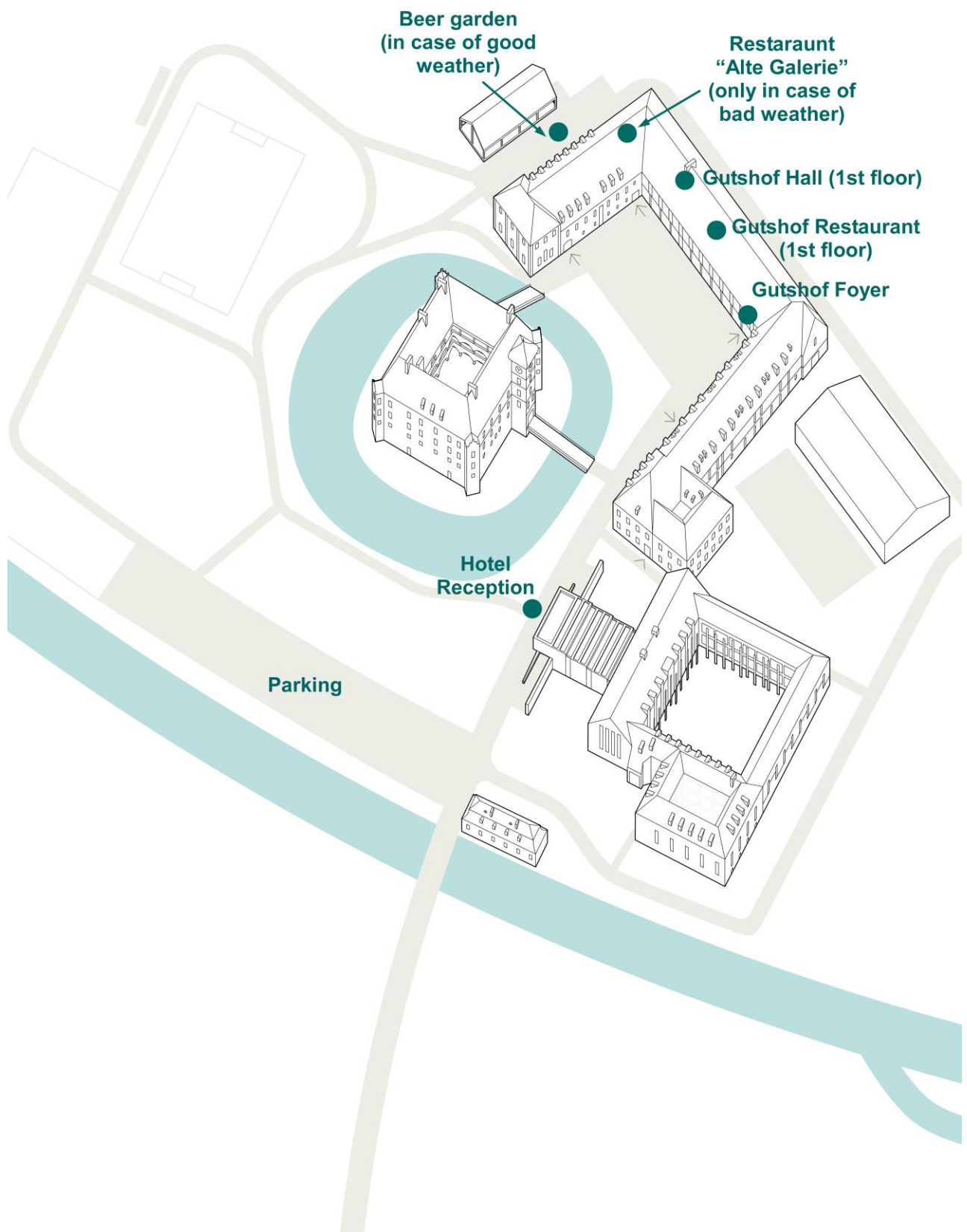
25th Topical Conference on Radio-Frequency Power in Plasmas, 19-22 May 2025, Hohenkammer, Germany

Time	Sunday, 18 May	Monday, 19 May	Tuesday, 20 May	Wednesday, 21 May	Thursday, 22 May				
7:00-7:30		Breakfast time	Breakfast time	Breakfast time	Breakfast time				
7:30-8:00		On-site registration							
8:00-8:30									
8:30-9:00		8:45 Welcome							
9:00-9:30		Special session 1	I-07 M. J. Mantsinen	Special session 2	I-21 B. J. Ding				
9:30-10:00		review R-1 W. Helou	I-08 W. Zhang	review R-3 S. Shiraiwa	I-22 E. Leppink				
10:00-10:30		I-01 M. Usoltseva	I-09 R. Dumont	I-15 E. Moral Sánchez	I-23 Z. Gao				
10:30-11:00		Coffee break	Coffee break	Coffee break	Coffee break				
11:00-11:30		I-02 Y. Takase	I-10 C. Slaby	I-16 P. U. Lamalle	I-24 A. Kumar				
11:30-12:00		I-03 S. J. Frank	I-11 Yu. V. Kovtun	I-17 A. Fukuyama	I-25 R. Diab				
12:00-12:30		I-04 W. Harris	I-12 D. Moseev	I-18 O. Maj	I-26 J. Larson				
12:30-13:00		Lunch	Lunch	Lunch	Lunch				
13:00-13:30		included in conference fee	included in conference fee	included in conference fee	included in conference fee				
13:30-14:00			14:15 Group photo	14:00 Business meeting					
14:00-14:30		I-05 C. M. Qin	I-13 P. Dumortier	I-19 J. B. Lestz	I-27 D. Smithe				
14:30-15:00		I-06 A. Di Siena	I-14 S. Porporato	I-20 J. Hillairet	I-28 Á. Sánchez-Villar				
15:00-15:30	On-site registration	Coffee	Coffee	Coffee	Closing				
16:00-16:30		Poster session Monday	Poster session Tuesday	Poster session Wednesday	Coffee				
16:30-17:00									
17:00-17:30					Program Committee meeting				
17:30-18:00									
18:00-18:30					Dinner time	Dinner time	Conference dinner included in conference fee		
18:30-19:00									
19:00-19:30									
19:30-20:00									
20:00-20:30		Dinner time	20:30 After-dinner review R-2 J. Myra						
20:30-21:00									
21:00-21:30									

Locations:

- Talks: Gutshof Hall
- Regular posters: Gutshof Foyer
- Posters based on talks: Gutshof Hall

- Breakfasts, lunches and the conference dinner on May, 21: Gutshof Restaurant
- Dinners on other days: in case of good weather - beer garden from 17:00, only in case of bad weather - Restaurant "Alte Galerie" from 18:00 (Sunday: from 18:30)



Monday, 19 May

Number	Speaker	Title	Chairs:
R-1	Walid Helou	The ITER ICRF system under the new ITER baseline: latest updates and technological developments	V. Bobkov
I-01	Maria Usoltseva	Overview of the ICRF heating system in SPARC	
I-02	Yuichi Takase	Ramp-up and Sustainment Scenarios for Tokamak Energy's Fusion Pilot Plant	D. Hartmann
I-03	Samuel Frank	Radiofrequency Heating Systems, Experiments, and Modeling on WHAM and Implications for Next Generation Mirror Fusion Devices	
I-04	Wayne Harris	RF Heating Experiments and Plans for C-2W and Copernicus	Ph. Jacquet
I-05	Chengming Qin	Conceptual design for the ICRF system of CFEDR	
I-06	Alessandro Di Siena	Resonant Interactions Between Fast Ions and ITG Turbulence: Implications for Confinement Improvements in Fusion Reactors	

Tuesday, 20 May

Number	Speaker	Title	Chairs:
I-07	Mervi Mantsinen	40 Years of ICRF Physics on the JET Tokamak: Highlights and Lessons Learned for Future Facilities	M. Schneider
I-08	Wei Zhang	Recent progress in ICRF experiments on EAST	
I-09	Remi Dumont	RF power experiments in WEST to prepare for next-step fusion device operation	N. Tsuji
I-10	Christoph Slaby	ICRH simulations for the Wendelstein 7-X stellarator	
I-11	Yurii Kovtun	Overview of ICRF plasma production and heating in gas mixtures in stellarators	L. Colas
I-12	Dmitry Moseev	Exploring ICE Dynamics in Wendelstein 7-X: From Startup to Fast Ion-Driven Instabilities	
I-13	Pierre Dumortier	40 Years of ICRF Operation on JET: Achievements and Challenges	P. Bonoli
I-14	Simone Porporato	Radar arc and impairment detection and localization for the ITER ICRF antenna	
R-02	James Myra	ICRF boundary-plasma interactions: reflections on progress and challenges	

Wednesday, 21 May

Number	Speaker	Title	
R-2	Syun'ichi Shiraiwa	Finite element modeling of RF waves in fusion plasmas: progress in past decades and future role	R. Bilato
I-15	Elena Moral Sánchez	A structure-preserving spline Finite Element solver for the cold-plasma model	
I-16	Philippe Lamalle	Integral dielectric kernel approach to modelling RF heating in toroidal plasmas	D. Van Eester
I-17	Atsushi Fukuyama	Kinetic Full Wave Analyses in Inhomogeneous Plasmas Using Integral Form of Dielectric Tensor	
I-18	Omar Maj	Beam Tracing in Phase Space: Paraxial Description of High-Frequency Wave Beams in Turbulent Plasmas	J. Caughman
I-19	Jeff Lestz	Experimental Evidence of Helicon Wave Heating and Current Drive in DIII-D	
I-20	Julien Hillairet	Design of the Actively Cooled Ion Cyclotron Traveling Wave Array System for WEST	

Thursday, 22 May

Number	Speaker	Title	
I-21	Bojiang Ding	Exploration in LH coupling and current drive towards long-pulse operation on EAST	B. Van Compernelle
I-22	Evan Leppink	First Results from the High Field Side Lower Hybrid Current Drive Experiment in DIII-D	
I-23	Zhe Gao	Spectrum Evolution and Density Limit in Self-consistent Modeling of Lower Hybrid Wave Propagation with Parametric Instabilities	
I-24	Atul Kumar	Tungsten Erosion and Transport Induced by RF Sheaths at Antenna Structures in the WEST Tokamak	D. Milanesio
I-25	Raymond Diab	Mitigation of ICRF - Edge Plasma Interaction in Alcator C-Mod	
I-26	Joshua Larson	Wave-filament Interaction Experiments on the Large Plasma Device (LAPD)	N. Bertelli
I-27	David Smithe	Modeling of Turbulence, Transport, and RF-induced Convective Cells in Tokamak Boundary Plasma	
I-28	Álvaro Sánchez-Villar	Automated ICRF heating surrogate models via machine learning	

Poster session Monday, 19 May, 15:30-18:00, Gutsthof Foyer

Number	Main author	Title
Monday-01	Yuhao Jiang	ICRF Antenna Modeling and Coupling Analysis for CFEDR
Monday-02	Jean Cazabonne	Suprathermal electrons transport studies in radio-frequency-heated tokamak plasmas
Monday-03	Guillaume Urbanczyk	ICRF near-field effects sensitivity to magnetic geometry
Monday-04	David Galindo	Benchmark of the new release of FELICE solver in TOPICA code with the AUG 3-strap antenna
Monday-05	Alex Reyner-Viñolas	First simultaneous observation of co- and counter-current fast ion losses in the ASDEX Upgrade tokamak
Monday-06	Sun Ho Kim	Status of LHFV research in KSTAR and Future Plan
Monday-07	Jacob van de Lindt	Design of a Symmetric Traveling Wave Antenna for Fast Ion Production on DD Tokamaks
Monday-08	Matthias Knolker	Analysis of O-mode Electron Cyclotron Heating in high density Super H-mode discharges in the DIII-D Shape and Volume Rise Campaign
Monday-09	Christina Migliore	3D numerical modeling of the ICRF heating in SPARC within a toroidal wedge
Monday-10	Michael Sieben	Fast Surrogate Modeling of ICRH Minority Heating at ASDEX Upgrade
Monday-11	Mao Wang	Development of LHCD system for long-pulse plasma on EAST tokamak
Monday-12	Eun-Hwa Kim	Effects of density turbulence on helicon wave propagation in the core plasmas
Monday-13	Claudia Salvia	Recent advances on ion cyclotron resonance heating scenarios for Divertor Tokamak Test facility
Monday-14	Gregory Wallace	Ion Cyclotron Heating in a Levitated Dipole Fusion Reactor
Monday-15	Aleksandra Alieva	Progress in the pre-conceptual design of the auxiliary heating and current drive system for the Tokamak Energy Fusion Pilot Plant
Monday-16	Grant Rutherford	Initial Measurements of the Current Profile in High Field Side Lower Hybrid Experiments
Monday-17	LingFeng Lu	ICRH system for the HL-3 tokamak
Monday-18	Ruben Otin	Validation of ERMES 20.0 Finite Element Code for MAST Upgrade O-X mode conversion
Monday-19	Lara Hijazi	Parametric analysis for developing TWA antenna for WEST using minority heating ICRH technique
Monday-20	Jiahui Zhang	3D Simulation of ICRF Wave Heating on EAST Tokamak Based on Finite Elements Method
Monday-21	Daniele Milanesio	Full-wave modeling of arcs within the ITER ICRF antenna for usage in the simulations and design of the RADAR Arc Detection system
Monday-22	Zikai Huang	Energy Transfer and Spectral Evolution Induced by Parametric Decay Instability During the Injection of Lower Hybrid Waves
Monday-23	Paul Bonoli	Research Results from the SciDAC-5 Partnership for Advanced Simulation of RF - Plasma - Material Interactions

Monday-24	Louche Fabrice	Progress in the analysis of the cavity resonances in the ITER ICRF antenna port plug
Monday-25	Alfredo Cioffi	Circuit modeling and analysis of different matching configurations for the DTT ICRF system
Monday-26	Wouter Tierens	Power coupled to the slow wave resonance cone in the cold collisionless limit
Monday-27	Igor Girka	Revisiting the Explanation to Numerical Study of Coaxial and Surface Mode Excitation by an ICRF Antenna in Large Machines
Monday-28	Raymond Diab	Direct Measurement of ICRF-Enhanced Plasma Potentials Using Reciprocating Emissive Probes on the WEST tokamak
Monday-29	Ernesto Lerche	Real-time estimates of the ICRF single-pass absorption for ITER
Monday-30	Nicolas Lopez	ST40 as a testbed for non-inductive technologies for fusion pilot plants
Monday-31	Liang Zhu	Application of Solid-state High-power Microwave Source in MPCVD Reactor

Posters based on talks, Monday, 19 May, 15:30-18:00, Gutsthof Hall

Number	Main author	Title
Monday-I-01	Maria Usoltseva	Overview of the ICRF heating system in SPARC
Monday-I-02	Yuichi Takase	Ramp-up and Sustainment Scenarios for Tokamak Energy's Fusion Pilot Plant
Monday-I-03	Samuel Frank	Radiofrequency Heating Systems, Experiments, and Modeling on WHAM and Implications for Next Generation Mirror Fusion Devices
Monday-I-04	Wayne Harris	RF Heating Experiments and Plans for C-2W and Copernicus
Monday-I-05	Chengming Qin	Conceptual design for the ICRF system of CFEDR
Monday-I-06	Alessandro Di Siena	Resonant Interactions Between Fast Ions and ITG Turbulence: Implications for Confinement Improvements in Fusion Reactors
Monday-I-21	Bojiang Ding	Exploration in LH coupling and current drive towards long-pulse operation on EAST
Monday-I-22	Evan Leppink	First Results from the High Field Side Lower Hybrid Current Drive Experiment in DIII-D
Monday-I-23	Zhe Gao	Spectrum Evolution and Density Limit in Self-consistent Modeling of Lower Hybrid Wave Propagation with Parametric Instabilities
Monday-R-1	Walid Helou	The ITER ICRF system under the new ITER baseline: latest updates and technological developments

Poster session Tuesday, 20 May, 15:30-18:00, Gutsthof Foyer

Number	Main author	Title
Tuesday-01	Léonel Tsowemoo Faabomve	Radio-frequency sheath simulations with non-adiabatic electrons
Tuesday-02	Roman Ochoukov	Design, Installation, and First Results from the Ion Cyclotron Emission Diagnostic on TCV
Tuesday-03	Marcel Gaudreau	Direct Cavity Combiner for High Power Solid State RF Transmitter
Tuesday-04	Gyeonghun Pyeon	Construction of generalized quasi-linear diffusion coefficient using neural networks
Tuesday-05	Alena Krivska	Calculation of the magnetic field and its modal analysis in the port plug cavity of the ITER antenna
Tuesday-06	Andrew Seltzman	RF Qualification of a Monolithic Additive Manufactured High Field Side Lower Hybrid Current Drive Launcher
Tuesday-07	Xiaoyu Yang	Parameter Study of Parametric Instabilities in Helicon Wave Current Drive Experiments
Tuesday-08	Giorgio Sebastiano Mauro	Design and optimization of a curved three-strap antenna for DTT ICRH system
Tuesday-09	Mi Joung	Recent experimental results of ECH in KSTAR
Tuesday-10	Yurii Martseniuk	First Experiments on 3D Plasma Calculations Using Positive Maxwellian Operator
Tuesday-11	Haruhiko Kohno	Toward the Development of a Two-Dimensional Microscale Radio-Frequency Sheath Model for Grazing Incidence Magnetic Fields
Tuesday-12	John Wright	Full-wave simulation of ion cyclotron range of frequency heating in a mirror device
Tuesday-13	Kunyu Chen	Theoretical Scaling of the Density Limit of Lower Hybrid Current Drive
Tuesday-14	Dirk Van Eester	Almost-off-the-shelf tools for ICRH modelling
Tuesday-15	Emanuele Poli	ECRH and ECCD Studies for DEMO and for a Volumetric Neutron Source (VNS)
Tuesday-16	Yunho Jeong	Evaluation of Neoclassical Impurity Transport affected by ICRH with a 4-D Fokker-Planck Code
Tuesday-17	Riccardo Ragona	Near Field Analysis of the ICRF Travelling Wave Array Launcher for WEST
Tuesday-18	Martin Schubert	Experimental comparison of millimeter wave power monitor designs
Tuesday-19	Wentao Geng	Development of a 400 kW ICRF system for the J-TEXT tokamak
Tuesday-20	Yuri Petrov	Coupled Fokker-Planck/full-wave simulations of fast ion ICRF heating in a mirror plasma using CQL3D-m and AORSA
Tuesday-21	Bernard Reman	Integral dielectric kernel implementation to model RF heating in toroidal plasmas
Tuesday-22	Lukas Böhner	Modelling of ion distributions under ICRH

Tuesday-23	Abhay Ram	Ionization of Gas by Electron Cyclotron Waves for Efficient Startup
Tuesday-24	Vincent Maquet	First Implementation of a Fast 2D Wave-Solver Using the Budé Method with NGSolve
Tuesday-25	Conor Perks	Argon pumpout by ICRF three-ion heating in Alcator C-Mod and WEST with projections for tungsten in SPARC
Tuesday-26	David Smithe	Novel ICRH Coupler Configuration for High-Field Tokamak
Tuesday-27	Andreas Redl	First results of high- δ pulses with ICRH-only in ASDEX Upgrade in preparation for SPARC operation
Tuesday-28	Vittorio Francalanza	Evaluating the Impact of Turbulent Tokamak Edge Plasma on Ion Cyclotron Wave Propagation and Absorption: A Stochastic 1D Model in a DTT Plasma Scenario
Tuesday-29	Stephen Wukitch	High Field Side Lower Hybrid Current Drive Experiment in DIII-D Overview
Tuesday-30	Seung Gyou Baek	Evaluation of Fast Ion Distribution in ICRF Experiments on EAST using a TORIC/CQL3D Full-wave/Fokker-Planck Code
Tuesday-31	Mason Yu	Design and Development of ICRF Heating System on the Wisconsin HTS Axisymmetric Mirror (WHAM)

Posters based on talks, Tuesday, 15:30-18:00, Gutsthof Hall

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Tuesday-I-11	Yurii Kovtun	Overview of ICRF plasma production and heating in gas mixtures in stellarators
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Tuesday-I-25	Raymond Diab	Mitigation of ICRF - Edge Plasma Interaction in Alcator C-Mod
Tuesday-I-26	Joshua Larson	Wave-filament Interaction Experiments on the Large Plasma Device (LAPD)

Poster session Wednesday, 21 May, 15:30-18:00, Gutsthof Foyer

Number	Main author	Title
Wednesday-01	Wendong Ma	The Design And Implementation Of The Microwave Exciter For CRAFT LHCD System
Wednesday-02	Olena Burkovska	An implicit-explicit time splitting strategy for the far SOL plasma fluid model with DG-FEM discretization
Wednesday-03	Nicola Bertelli	RF heating/current drive scoping study for the SMall Aspect Ratio Tokamak (SMART)
Wednesday-04	Lunan Liu	Real-Time Impedance Matching for Ion Cyclotron Resonance Heating System in EAST Using Capacitor-Based Feedback Control
Wednesday-05	Mireille Schneider	Operation of the Electron Cyclotron system in the ITER new baseline
Wednesday-06	Jungpyo Lee	Evaluation of neoclassical current and transport directly interacting with RF waves by developing a 4-D Fokker-Planck code
Wednesday-07	Helmut Faugel	Further upgrades of the ASDEX Upgrade ICRF system
Wednesday-08	Naoto Tsujii	Studies of Various Lower Hybrid Wave Launch Scenarios for Non-inductive Start-up on TST-2
Wednesday-09	Rhea Barnett	Extended benchmarking of the MFEM Anisotropic Plasma Solver (MAPS) 2D fluid transport code for coupled radiofrequency (RF) and fluid transport simulations.
Wednesday-10	Laurent Colas	Damping RF waves with low reflection in simulations of slab or curved magnetized plasma: parametrization, verification and implementation of Bermudez Perfectly Matched Layers
Wednesday-11	Mei Huang	Development and Preliminary Experiments of ECRH ECCD system on HL-3
Wednesday-12	Francesco Mirizzi	Design and Analysis of the Main Passive RF Components for the DTT ICRH System
Wednesday-13	Ruben Otin	Validation of ERMES 20.0 Finite Element Code for JET A2 antennas coupling studies
Wednesday-14	Hua Yang	Experimental observation of power dissipation of ICRF waves at the edge on EAST
Wednesday-15	Bart Van Compernelle	GENRAY/CQL3D modeling for NSTX-U with combined high harmonic fast wave and neutral beam heating and current drive
Wednesday-16	Joan Decker	Impact of ECRH on runaway electrons in the TCV tokamak
Wednesday-17	Jean-Michel Bernard	Development of an actively cooled radio-frequency test bench for the ITER ICRF windows
Wednesday-18	Markus Weiland	Experimental characterization of 2nd and 3rd harmonic ICRH with FIDA and neutron measurements
Wednesday-19	Dirk Van Eester	ICRH modelling of the Baseline D-T scenario in JET
Wednesday-20	John Caughman	The effect of high-power transient events on tungsten coatings used for radio frequency launcher applications
Wednesday-21	Thomas Jenkins	Modeling RF Sheath Formation in Turbulent Tokamak Boundary Plasma

Wednesday-22	Jeehyun Kim	Progress of high power helicon experiment in KSTAR
Wednesday-23	Dirk Hartmann	Commissioning and first experiments with the ICRH plant at Wendelstein 7-X
Wednesday-24	James Ridzon	Force Free Vacuum Interface for DIII-D High Field Side Lower Hybrid Current Drive System
Wednesday-25	Philippe Jacquet	The construction and commissioning of the Electron Bernstein Wave Heating and Current-Drive System for MAST-U
Wednesday-26	Eun-Hwa Kim	Effect of Density Irregularities on Radio Frequency Wave Propagation in Ionospheric Plasmas
Wednesday-27	James Ridzon	Dimensional Analysis of Pyrolytic Graphite Grids for 4CM2500KG Tetrode by Automated Laser Inspection
Wednesday-28	Roberto Bilato	The present status of the TORIC-SSFPQL codes
Wednesday-29	Chenbin Wu	Comparative Analysis of I-mode and L-mode LHCD Capabilities on EAST
Wednesday-30	Ahmed Hala	Hybrid Plasma Source (HPS) application in the design of a physical plasma antenna
Wednesday-31	Jingchun Li	Parametric study of helicon wave current drive in CFETR

Posters based on talks, Wednesday, 21 May, 15:30-18:00, Gutsthof Hall

Number	Main author	Title
Wednesday-I-15	Elena Moral Sánchez	A structure-preserving spline Finite Element solver for the cold-plasma model
Wednesday-I-16	Philippe Lamalle	Integral dielectric kernel approach to modelling RF heating in toroidal plasmas
Wednesday-I-17	Atsushi Fukuyama	Kinetic Full Wave Analyses in Inhomogeneous Plasmas Using Integral Form of Dielectric Tensor
Wednesday-I-18	Omar Maj	Beam Tracing in Phase Space: Paraxial Description of High-Frequency Wave Beams in Turbulent Plasmas
Wednesday-I-19	Jeff Lestz	Experimental Evidence of Helicon Wave Heating and Current Drive in DIII-D
Wednesday-I-20	Julien Hillairet	Design of the Actively Cooled Ion Cyclotron Traveling Wave Array System for WEST
Wednesday-I-27	David Smithe	Modeling of Turbulence, Transport, and RF-induced Convective Cells in Tokamak Boundary Plasma
Wednesday-I-28	Álvaro Sánchez-Villar	Automated ICRF heating surrogate models via machine learning
Wednesday-R2	James Myra	ICRF boundary-plasma interactions: reflections on progress and challenges
Wednesday-R3	Syun'ichi Shiraiwa	Finite element modeling of RF waves in fusion plasmas: progress in past decades and future role

Information

Main conference website:

<http://www.ipp.mpg.de/rfppc2025>

Conference INDICO website to manage abstracts, registrations and paper submissions:

<https://plan.events.mpg.de/event/395/>

Website of Schloss Hohenkammer:

<https://www.schlosshohenkammer.de>

Lunches on Monday, Tuesday and Wednesday:

Lunch is served as a buffet. At the end of the morning session (at 12:30) on Monday, Tuesday and Wednesday, on your way to the Gutshof Restaurant, please take a token from the bags provided at the exit of the conference room (Gutshof Hall). The tables on either side of the Gutshof Restaurant are reserved for us and are numbered. The token will indicate the number of the table at which you will be seated.

The reason for this is to have mixed tables during the lunches.

There will be no tokens for breakfasts, for the conference dinner on May, 21 and for the lunch on Thursday.

Parking costs at Schloss Hohenkammer: 5 EUR / day

Telephone number of RFPPC2025 for urgent cases (only from May, 18 to May, 22):
+49 (0)162 197 4040