**Session Program** 

13-18 Oct 2025

# 30th IAEA Fusion Energy Conference (IAEA FEC 2025)

Posters 3

### **Thursday 16 October**



# EXPERIMENTAL AND NUMERICAL STUDY OF BROAD WAVENUMBER TURBULENCE AND TRANSPORT IN ION INTERNAL TRANSPORT BARRIER PLASMAS ON EAST

Speaker

Pengjun Sun

### BREAKING OF THE ION TEMPERATURE CLAMPING IN ELECTRON HEATED PLASMAS WITH TURBULENCE STABILIZATION

Speaker

Pierre Manas

#### Beamlet divergence of research and development negative ion source with RF mode at NIFS

**Speaker** Haruhisa Nakano

# MUTLISCALE GYROKINETIC SIMULATIONS OF THE INTERACTION BETWEEN TURBULENCE AND FISHBONE

Speaker

Huishan Cai

#### How 'the tail wags the dog': physics of edge-core coupling by inward turbulence propagation

**Speaker** Mingyun Cao

### TURBULENCE AND TRANSPORT DEPENDENCE ON TEMPERATURE RATIO WITH TE/TI ~ 1-1.5 IN EAST H-MODE PLASMA

**Speaker** Pan Li

#### ELECTRON CYCLOTRON HEATED LOW TO HIGH MODE TRANSITION IN KSTAR

Speakers

Hogun Jhang, Dr Minjun Choi

#### Global gyrokinetic simulations of isotope effects for future tokamak plasma core and pedestal

**Speaker** Dr Lei Qi

#### Progress on nonlinear MHD modeling of flux pumping and hybrid scenario for ASDEX Upgrade plasmas

Speaker

Dr Haowei Zhang

#### CHARACTERIZATION OF TURBULENT TRANSPORT OF PARTICLES, OPTIMIZATION OF PLASMA HEATING AND OPERATION CURRENT CONTROL IN THE COILS OF THE SCR-1 STELLARATOR

**Speaker** Dr Ivan Vargas-Blanco

#### Physics of ITG transport reduction in negative triangularity plasmas

Speaker

Patrick Diamond

#### Dynamic Evolution of Pellet Fueling from Ablation Cloud to Reheat Mode in Heliotron J

Speaker

Shinichiro Kado

# THE FINAL DESIGN ACCOMPLISHMENT OF THE EC UPPER LAUNCHER AND EX-VESSEL WAVEGUIDE SYSTEMS FOR ITER

**Speaker** Sandra Julia Torres

#### Discrete stellarator coil optimization

Speaker

Kenneth Hammond

# THE ESTABLISHMENT OF THE SYNTHETIC DIAGNOSTIC MODELING SPECIFICALLY FOR THE IMAGING NEUTRAL PARTICLE ANALYZER ON THE EAST

Speaker

Jiayi Zhang

# ENERGETIC PARTICLES TRANSPORT IN THE PRESENCE OF GYROKINETIC TURBULENCE AND ALFVÉN ACTIVITY

Speaker

Diego del-Castillo-Negrete

# Effective Edge Transport Barriers Supported by Intrinsic Rotation Shear in DIII-D Negative Triangularity Plasmas

Speaker

L. Schmitz

# CONFINEMENT MODELLING OF ENHANCED PLASMA PERFORMANCE AFTER MULTIPLE PELLET INJECTIONS IN THE TJ-II STELLARATOR

Speaker

Prof. Victor Tribaldos

#### THE IMPURITY BEHAVIORS AND TRANSPORT ANALYSIS OF HL-2A AND HL-3 PLASMAS

Speaker

Dr Liang Liu

#### Exploitation of stable high-Ip regime under new tungsten divertor environment in KSTAR

Speakers

Boseong Kim, Dr Sang-hee Hahn

# FREEGSNKE: AN OPEN SOURCE, PURE-PYTHON, PREDICTIVE EVOLUTIVE EQUILIBRIUM CODE FOR CONTROL DESIGN AND VALIDATION -- Applications at UKAEA

**Speaker** Nicola Amorisco

#### Fuel supply and helium ash exhaust in global gyrokinetic ITG/TEM turbulence

**Speaker** Kenji Imadera

# EFFECT OF PFIRSCH-SCHLÜTER FLOW ON TOROIDAL FLOW IN THE EDGE REGION OF ADITYA-U TOKAMAK

**Speaker** Ankit Kumar

#### Flux Pumping in ASDEX Upgrade, JET and JOREK

**Speaker** Dr Alexander Bock

How MeV-range ions and high  $\beta$  will shape the core plasma dynamics of fusion power plants

**Speaker** Dr Samuele Mazzi

#### Towards Dual Plasma Equilibrium and Transport Scenario Planning for Tokamaks Using COTSIM

Speaker

Brian Leard

#### PROGRESS OF CRAFT NEGATIVE ION SOURCE NEUTRAL BEAM INJECTION TEST FACILITY

#### Speakers

Dr Jianglong Wei, Dr Lizhen Liang

# HELIUM ASH REMOVAL: COMPREHENSIVE EFFECTS OF ALPHA PARTICLES ON THE SOURCE AND TRANSPORT OF HELIUM ASH

Speaker Weixin Guo

### GAM FREQUENCY STRUCTURE AND PROPERTIES IN OHMIC AND POWERFUL ECR-HEATED PLASMAS IN A TOKAMAK

**Speaker** Prof. Alexander Melnikov

#### MHD-DRIVEN GLOBAL GAM IN ADITYA-U TOKAMAK

Speaker

Kaushlender Singh

# DEVELOPMENT, TESTING, AND COMMISSIONING OF 300 KVA T-NPC INVERTER FOR 300 KV, 2A HIGH VOLTAGE DC POWER SUPPLY FOR NEUTRAL BEAM ACCELERATOR SYSTEM

Speaker

Kumar Saurabh

#### THERMAL MANAGEMENT STUDY ON INDIGINEOUSLY DEVELOPED HIGH POWER RF COMBINER FOR RF SOURCE OF ITER ION CYCLOTRON RESONANCE HEATING SYSTEM

Speaker

Rohit Anand

### Qualification of the European gyrotrons and power supplies of the Electron Cyclotron Heating and Current Drive system of ITER

**Speaker** Francisco Sanchez Arcos

#### NEUTRAL PENETRATION AND FUELING OF ADITYA-U TOKAMAK PLASMAS BY GAS-PUFFS

**Speaker** Ms Dipexa Modi

### Core-edge Integrated Scenario with a High-Performance Hybrid Core, Naturally Small ELMs, and a Dissipative Divertor on DIII-D

**Speaker** Brian Victor

### FDTD SIMULATION OF THE PROPAGATION CHARACTERISTICS OF MILLIMETER-WAVE VORTEX IN MAGNETIZED PLASMA

**Speaker** Chenxu Wang

### The construction and commissioning of the Electron Bernstein Wave Heating and Current-Drive System for MAST-U

**Speaker** Dr Philippe Jacquet

#### Lagrangian statistics of heavy impurity transport in drift-wave turbulence

Speaker

Zetao Lin

### Energetic-electron-driven Geodesic Acoustic Mode Interaction with Microtearing Mode for Improved Confinement on HL-3 Tokamak

Speaker Shiqin Wang

# GYROKINETIC REDUCED MODELS FOR PEDESTAL TRANSPORT: VALIDATION AND APPLICATION TO CORE EDGE INTEGRATION

**Speaker** David Hatch

#### Reconstructing the Plasma Boundary with a Reduced Set of Diagnostics

Speaker

Maksim Stokolesov

### EXPLORING THE ROLE OF SUBDOMINANT KINETIC BALLOONING MODE IN DRIVING TURBULENT TRANSPORT IN NSTX

Speaker

Tajinder Singh

### INHOUSE DEVELOPMENT OF WIDEBAND 10 KW SOLID STATE POWER AMPLIFIER FOR ICH & CD RF SOURCE

**Speaker** Manoj Patel

#### PROGRESS INTO THE THEORETICAL & EXPERIMENTAL FUSION PLATFORM IN MEXICO

Speakers

Mr Héctor Kaleb Cantú Aradillas, Max Salvador

#### Neural network reduced models for plasma turbulence

**Speaker** Zhisong Qu

#### Status of DIII-D High Field Side Lower Hybrid Current Drive Experiment

Speaker

Evan Leppink

#### ENHANCED SURGE PROTECTIONS FOR DC ULTRA-HIGH VOLTAGE POWER SUPPLY FOR ITER NBI

Speaker

Shoichi Hatakeyama

### ON ADVANCED OPERATION SCENARIO DEVELOPMENT IN KSTAR TOWARD COMPACT PILOT DEVICE

Speaker Yong-Su Na

Observations of core heating and current drive by helicon waves at DIII-D

**Speaker** Bart Van Compernolle

#### Can turbulent transport in optimized stellarators be lower than tokamaks

Speaker

Haotian Chen

### First fast ion measurements by the collective Thomson scattering and ion cyclotron emission diagnostics at Wendelstein 7-X.

**Speaker** Dmitry Moseev

#### Extrapolative Predictability of Plasma Turbulent Transport via a Multi-Fidelity Data Fusion Approach

**Speaker** Dr Shinya Maeyama

#### Evaluation of plasma performance in JA DEMO steady-state operation

Speaker

Shota Sugiyama

### EFFECT OF DECREASING ASPECT RATIO ON ION-SCALE ELECTROSTATIC DRIFT-TYPE MODES AND PEDESTAL STABILITY IN H-MODE PLASMAS

Speaker

Jin yong Kim

### Prediction of heat flux splitting by non-axisymmetric magnetic field in the realistic tokamak wall and divertor based on 3D CAD model

Speaker Dr Kimin Kim

### PARTICLE TRANSPORT OF OHMIC DISCHARGES WITH DIFFERENT PLASMA CURRENT IN EAST TOKAMAK

Speaker SHOUXIN WANG

#### The development of millimeter-wave heating system towards CFEDR

Speaker Dr Xiaojie Wang

#### RFX-mod2 and the NEFERTARI project: a diffuse infrastructure for the study of magnetically confined plasmas for fusion

**Speaker** Dr Lionello Marrelli

#### THE STATUS AND DESIGN CHALLENGES OF THE HEATING AND CURRENT DRIVE SYSTEMS FOR DTT

Speaker

Mr Gustavo Granucci

#### IMPROVEMENT OF PLASMA PERFORMANCE BY EDGE ECRH POWER DEPOSITION IN EAST

Speaker

Dr yongliang Li

#### DESIGN OF THE ELECTRON CYCLOTRON HEATING EXPANSION SYSTEM ON EAST

**Speaker** Weiye Xu Fast ion transport simulations for the Spherical Tokamak for Energy Production

**Speaker** Dr Antti Snicker

#### Reconstruction of quasi-symmetric stellarator geometry from a low-dimensional parameter space

Speaker

Dr Xishuo Wei

# THE WENDELSTEIN 7-X ECRH PLANT - EXPERIENCE WITH RELIABLE LONG PULSE OPERATION OF A MULTI MW GYROTRON INSTALLATION

Speaker

Stefan Marsen

Numerical studies of impurity neoclassical transport in plasma edge region by global full-f gyrokinetic simulations

**Speaker** Seikichi Matsuoka

#### IMPACT OF LI-GRANULE INJECTION ON THE IMPROVEMENT OF BULK ENERGY AND PARTICLE TRANSPORT AND EXPULSION OF MID/HIGH-Z IMPURITIES IN THE LHD HELIOTRON

Speaker

Daniel Medina Roque

#### Ion Doppler Spectroscopy System on the SUNIST-2 Spherical Tokamak

Speaker

Menghua Yang

#### OVERVIEW OF THE DESIGN AND PROCUREMENT OF ECRH SYSTEM FOR DTT

Speaker

Saul Garavaglia

#### Global eigenmode structure of linear drift-wave instabilities on flux surfaces in stellarators

Speaker

Mr Hongxuan Zhu

# IMPACT OF THE TEMPERATURE RATIO ON TURBULENCE AND IMPURITY TRANSPORT IN THE EAST PLASMA CORE

**Speaker** Gongshun Li

# EFFECTS OF INTER-ELM QUASI-COHERENT MODES ON THE DYNAMICS OF PEDESTAL TURBULENCE ON HL-2A TOKAMAK

Speaker Zhongbing Shi

# DEVELOPMENT AND FUTURE PLAN OF THE NEGATIVE HYDROGEN ION SOURCES FOR NBI AT SWIP

**Speaker** Mr Miao Zhao

#### INTEGRATED NUMERICAL ANALYSIS OF IMPURITY TRANSPORT AND SOURCES FOR HIGH CURRENT-HIGH POWER BASELINE PULSES WITH T IN JET-ILW

Speaker

Irena Ivanova-Stanik

### SAFE TERMINATION OF RUNAWAY ELECTRON BEAMS DURING MAJOR DISRUPTIONS BY SHATTERED PELLET INJECTION IN THE HL-3 TOKAMAK

**Speaker** Yipo Zhang

### MACHINE LEARNING AIDED NEUTRON YIELD FOR DUD DETECTION BASED ON JET AND TFTR DEUTERIUM-TRITIUM PLASMAS

Speaker

Lidia piron

### FIRST EXPERIMENTAL OBSERVATION OF ``STAIRCASE" HIGH CONFINEMENT MODE IN TOKAMAK PLASMA

Speaker

Yi Zhang

#### Repetitive generation of hydrogen negative ion beams with initial target parameters for the ITER HNB

Speaker

Dr Masashi Kisaki

#### Study on the key technologies involved in the laser neutralisation of negative ion source

Speakers

Prof. Yuan-lai Xie, Dr huihui hong

Influence of resonant magnetic perturbation on flow and turbulence dynamics towards L-H transition in HL-3

**Speaker** Min Jiang

Exploration of emission spectra from highly charged tungsten impurity ions in X-ray wavelength range of 3.7–4.0 Å in the Large Helical Device for fusion plasma diagnostics

**Speaker** Dr Tetsutarou Oishi

# IMAPCT OF RUNAWAY ELECTRON ON PLASMA INITIATION OF ADITYA-U TOKAMAK AS INVESTIGATED VIA OBSERVED HARD X-RAY SPECTRUM

**Speaker** Shishir Purohit

# THE CRITICAL ROLE OF SHEAR FLOW COLLAPSE IN NEAR GREENWALD DENSITY LIMIT OPERATION ON THE HL-2A TOKAMAK

Speaker

Yi Yu

# STRAY RF EVALUATION AND DESIGN IMPROVEMENT ON THE ITER EQUATORIAL EC H&CD LAUNCHER

**Speaker** Satoru Yajima

#### Performance MT-I spherical tokamak with upgraded power supplies system

Speaker Sarfraz Ahmad

Non-inductive high-performance discharges on TCV on the path to steady state

**Speaker** Stefano Coda

#### Completion of Manufacturing and Testing of 8 ITER Gyrotrons with its Auxiliary Systems

Speaker

Dr Ken Kajiwara

# DATA-EFFICIENT DIGITAL TWINNING STRATEGIES AND SURROGATE MODELS OF QUASILINEAR TURBULENCE IN JET AND STEP

Speaker

Lorenzo Zanisi

#### Technologies of high voltage neutral beam injectors for magnetic fusion devices

Speaker

Dr oleg sotnikov

### ADVANCING TOKAMAK TRANSPORT SIMULATIONS WITH MMM 9.1: BRIDGING THEORY AND APPLICATION

Speaker

Tariq Rafiq

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