

# **FEC**2025

# 30<sup>th</sup> IAEA FUSION ENERGY CONFERENCE

13-18 OCTOBER **2025** 

O CHENGDU, PEOPLE'S REPUBLIC OF CHINA

PROGRAMME AND CONFERENCE MATERIAL



#### Organized by the:



Hosted by the People's Republic of China through the China Atomic Energy Authority (CAEA)

# 30th IAEA Fusion Energy Conference 13th - 18th October 2025 Chengdu People's Republic of China

**Programme & Conference Material** 

#### Introduction

The International Atomic Energy Agency (IAEA) fosters the exchange of scientific and technical results in fusion research and development through its series of Fusion Energy Conferences.

The 30th IAEA Fusion Energy Conference (FEC 2025) aims to provide a global forum for the exchange of scientific and technical results in fusion energy research and development on a range of themes, including experiments and theory for magnetic, inertial, and innovative confinement concepts, fusion technology and materials, and potential pathways to fusion energy.

According to the IAEA's Fusion Device Information System (FusDIS), as of 2025, there are almost 150 experimental fusion devices and testing facilities operating, under construction or being planned, and more than 20 fusion plant designs under development. Recent scientific and technical advances, coupled with a dynamic private sector, and the pressing concerns of climate change and energy security, have shifted the focus to addressing the remaining challenges. These include demonstrating the technological feasibility of fusion power and ensuring its safety and economic viability as a sustainable energy source.

The scope of FEC 2025 is, therefore, intended to reflect the priorities of this new era in fusion energy research, development, demonstration, and preparation to deployment. The conference aims to serve as a platform for sharing the results of research and development efforts in both the public and private sector, that have been shaped by these new priorities, and to thereby help in pinpointing worldwide advances in fusion experiments, theory, technology, engineering, materials, advanced concepts, safety, socioeconomics, and commercialization pathways. The conference will thus help in defining the way forward.

With the participation of international organizations as well as more than 50 countries and a great number of research organisations, academia, and private companies, it is expected that this conference will, like previous conferences in the series, serve to identify the possibilities and means for continuous and effective international collaboration in this area.

The 30th IAEA Fusion Energy Conference is being hosted by the China Atomic Energy Authority (CAEA) from 13 to 18 October 2025. Previous conferences in this series were held in Salzburg, Austria (1961), Culham, United Kingdom (1965), Novosibirsk, Russian Federation (1968), Madison, United States of America (1971), Tokyo, Japan (1974), Berchtesgaden, Germany (1976), Innsbruck, Austria (1978), Brussels, Belgium (1980), Baltimore, United States of America (1982), London, United Kingdom (1984), Kyoto, Japan (1986), Nice, France (1988), Washington DC, United States of America (1990), Würzburg, Germany (1992), Seville, Spain (1994), Montreal, Canada (1996), Yokohama, Japan (1998), Sorrento, Italy (2000), Lyon, France (2002), Vilamoura, Spain (2004), Chengdu, China (2006), Geneva, Switzerland (2008), Daejeon, Republic of Korea (2010), San Diego, United States of America (2012), St. Petersburg, Russian Federation (2014), Kyoto, Japan (2016), Ahmedabad, India (2018), Nice, France (postponed from 2020 to 2021 and held online because of the global COVID-19 pandemic) London, United Kingdom (2023).

#### **Programme Committee**

Chair: Takashi Inoue | Japan

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Gustavo Paganini Canal | Brazil

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Takahiro Suzuki | Japan Masaki Osakabe | Japan Ryosuke Kodama | Japan Hiroyasu Tanigawa | Japan Murakami Sadayoshi | Japan Jay Hyun Kim | Republic of Korea Eisung Yoon | Republic of Korea Sergei Lebedev | Russian Federation

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Alexander Melnikov | Russian Federation

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Alessandro Bortolon | USA

Colleen Nehl | USA Carmen Menoni | USA Arnie Lumsdaine | USA Philip Snyder | USA

#### **Conference Secretariat**

IAEA Scientific Secretaries:

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#### Ryan Wagner Laura Wheatley

Nuclear Power Technology Development Section | Division of Nuclear Power Department of Nuclear Energy International Atomic Energy Agency

Local Organisation:

Ning Shen Haoyue Chen Li Yang Yang Chen Southwestern Institute of Physics Chengdu, People's Republic of China

#### **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.

This book contains all synopses accepted for the conference, including their associated pre-print, presentation and poster. Synopses have been edited for style uniformity. The views expressed remain the responsibility of the named authors. No responsibility is held by the organizers for any material reproduced, or linked, in this book.

#### **IAEA Publications**

All IAEA publications may be ordered from the

Sales and Promotion Unit,

International Atomic Energy Agency,

P.O. Box 100, A-1400 Vienna,

Austria Fax: +43 1 2600-29302

sales.publications@iaea.org

www.iaea.org/Publications/index.html

#### **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.

Links on the abstract pages direct the reader to both the pre-print and the Nuclear Fusion journal, respectively.

#### 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.

Individuals 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.

#### **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**

This book contains all abstracts accepted by the FEC programme committee. Note that abstracts have been edited for style uniformity.

#### Overview of Contributions (as of October 14, 2025)

- 2 Keynote presentations
- 18 Overview talks
- 72 Regular talks
- 4 Rapporteur/Rapporteured talks
- 35 Overview posters
- 488 Regular posters
- 2 Post deadline talks
- 24 Post deadline poster

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

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

#### Participation in an IAEA Scientific Meeting

#### **Topics**

#### OV - Overview

Device overview, programme overview, topic overview

#### EX - Magnetic Fusion Experiments including Validation

Experimental plasma physics including validation

#### EX-C - Confinement

Confinement and transport, including scenario development

#### **EX-S - Stability**

Stability, including disruptions, runaways, control, mitigation & consequences

#### EX-W - Waves

Plasma waves and energetic particle interactions

#### **EX-D** - Divertor

Divertor/SOL physics and general power handling

#### **EX-E - Edge Transient Control**

Edge transients, ELMs, mitigation & benign/no ELM scenarios, 3D-physics

#### **EX-M** - Material Interactions

Materials-plasma interactions

#### EX-P - Pedestal, Core-edge, Turbulence

Pedestal physics and core-edge integration, turbulence, L-H transition

#### **EX-H** - Heating & Current Drive

Heating and current drive physics, antenna-plasma interactions

#### TH - Magnetic Fusion Theory and Simulation

Theory and simulation

#### TH-C - Confinement

Confinement and transport, including scenario development

#### TH-S - Stability

Stability, including disruptions, runaways, control, mitigation & consequences

#### TH-W - Waves

Plasma waves and energetic particle interactions

#### TH-D - Divertor

Divertor/SOL physics and general power handling

#### **TH-E - Edge Transient Control**

Edge transients, ELMs, mitigation & benign/no ELM scenarios, 3D-physics

#### **TH-M - Material Interactions**

Materials-plasma interactions

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Pedestal physics and core-edge integration, turbulence, L-H transition

#### TH-H - Heating & Current Drive

Heating and current drive physics, antenna-plasma interactions

#### **TEC - Fusion Energy Technology**

Not plasma interaction

#### **TEC-MTL - Material Developments**

Material Developments

#### **TEC-IVC - In Vessel Components**

In Vessel Components

#### **TEC-HCD - Heating & Current Drive**

Heating & Current Drive

#### **TEC-ITR - ITER Technology**

ITER Technology

#### **TEC-FNT - Fusion Nuclear Technology**

Includes nuclear science & technology research

#### **TEC-CTL** - Control

Control software and hardware, control algorithms and theory, control demonstration, Aldriven control

#### TEC-R - Robotics and Remote Maintenance

Robotics and Remote Maintenance

#### TEC-T - Tritium

Tritium

#### **IFE - Inertial Fusion Energy**

#### IFE - Inertial Fusion Energy

Experiments, theory and modelling, materials, power plant design, targets, drivers

#### IAC - Innovative and Alternative Fusion Concepts

#### IAC - Innovative and Alternative Fusion Concepts

Experiments, theory and modelling, linear, non-magnetic, magneto-inertial, hybrid concepts

#### PWF - Pathway to Fusion

#### PWF - Pathway to Fusion

Fusion plants (e.g., DEMO, pilot plants), timelines, roadmaps, supporting facilities, partnership frameworks, commercialization, supply chains, education and training, socioeconomic and environmental aspects, licensing

#### **Conference Location**

The 30th Fusion Energy Conference (FEC2025) will be held at Tianfu International Conference Center in Chengdu, People's Republic of China. The Conference will be organized by the IAEA and hosted by the People's Republic of China through the China Atomic Energy Authority (CAEA).

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## **Tuesday 14 October 2025**

O/1		FEC Technical Programme (11	:00-11:30)
11:00	O/1-1	FEC 2025 Administrative and Technical Remarks	IAEA
11:10	O/1-2	<b>Xuru Duan</b> Status and prospects of Fusion Research at the Southwestern Institute of Physics	China

## Overview 1: Fusion Science and Technology **OV/1**

Chairperson: Xuru Duan (China) (11:30-12:20) 11:30 OV/1-1 China Overview of CRAFT project progress 11:55 OV/1-2 P. Barabaschi **ITER** Progress of ITER and its value for fusion

#### OV/2**Overview 2: Tokamak Progress 1**

Chairperson: Fernanda Rimini (UK)			(14:00-15:40)
14:00	OV/2-1	M. Wischmeier	Italy
		Results from the last DD and DT JET campaigns in the framework of the EUROfusion Tokamak Exploitation activ	
14.05	OV/2 2	ity V. Cong	China
14:25	OV/2-3	X. Gong Overview of recent experimental results on EAST in suppor of ITER new research plan	
14:50	OV/2-4	J. Bucalossi	France

		Overview of WEST contributions to the new ITER baseline and fusion power planst	
15:15	OV/2-5	J. Garcia	France
		First JT-60SA plasma operation and plans in view of ITER and DEMO	

# OV/3 Overview 3: Tokamak Progress 2

Chairperson: Rui Ding (China)			(16:10-17:50)
16:10	OV/3-1	Y. Nam	Korea
16:35	OV/3-2	Overview of KSTAR experiments and future plan  T. Pütterich	Germany
17:00	OV/3-3	Overview of ASDEX Upgrade results  W. Zhong	China
		HL-3 research towards high-performance plasma and power exhaust solution	
17:25	OV/3-4	C. Theiler Progress and innovations in the TCV tokamak research pro-	Switzerland
		gramme	

# Wednesday 15 October 2025

# OV/4 Overview 4: Stellarator, Theory and Spherical Tokamak

Chairperson: Francesca Poli (ITER Organization)

Germany
,
Japan
Germany
•
UK

(08:30-10:10)

# TEC/1 ITER Technology

Chairperson: Hiroyasu Tanigawa (Japan) (10:40-12:20)

10:40	TEC/1-1	S. Yoon	Korea
		The 2024 new baseline ITER research plan	
11:00	TEC/2-3	A. Loarte	ITER
		Change of wall material from beryllium to tunsgten in the	
		new ITER Baseline: Physics basis, implications for research	
		plan and wall designs for its operational phases	
11:20	TEC/2-2	J. Reich	ITER
		ITER Core Machine Assembly Progress	
11:40	TEC/2-5	C.H. Noh	ITER
		Recovery of ITER sector modules from critical issues	
12:00	TEC/2-4	D. Marcuzzi	Italy
	-,	Achievement at the ITER Neutral Beam Test Facility and	J
		prospects for the R& D activities within the ITER research	
		plan	
		Part	

# TH/1 & Exhaust EX/1

Chairperson: Fulvio Militello (UK) (14:00-15:40)

14:00	TH/1-1	E. Kaveeva	Russia
		First SOLPS-ITER wide grid simulations of the ITER burning plasma scrape-off layer	
14:20	EX/1-1	K. Verhaegh	UK
		The physics basis for implementing Alternative Divertor	
		Configurations on reactors	
14:40	TH/1-2	H. Bufferand	France
		Hierarchy of turbulent transport models with the	
		SOLEDGE3X code	

15:00	TH/1-3	W. Zholobenko	Germany
		Validated, global edge-SOL turbulence simulations in vari-	•
		ous ELM-free regimes	
15:20	Ex/1-2	E. Tonello	Switzerland
		Modelling divertor solutions for power exhaust: in-depth	
		experimental validation in TCV	

#### EX/2 & TH/2

# Core-edge Integration, Pedestal

Chairperson: Jay Hyun Kim (Republic of Korea)			(16:10-17:50)
16:10	Ex/2-1	C. Giroud	UK
		High performance ELM-free semi-detached scenario sustained at high-current in JET DTE3	
16:30	EX/2-2	M. Dunne	Germany
		The physics of ELM-free regimes in EUROfusion tokamaks	
16:50	EX/2-3	Y. Liang	China
		First edge-localized mode suppression with lower hybrid waves on the EAST tokamak	
17:10	TH/2-1	J.K. Park	Korea
		New understanding of resonant layer response via extended drift MHD	
17:30	TH/2-2	M. Schneider	France
		Integrated Modelling activities in support of the ITER rebaseline	

#### **Thursday 16 October 2025**

#### EX/3 Long Pulse

Chairperson: Masaki Osakabe (Japan) (08:30-10:10) 08:30 EX/3-1 S. Bannmann Germany Attaining Tokamak level performance through plasma density profile shaping at Wendelstein 7-X 08:50 EX/3-2 R. Dumont France WEST Long-pulse achievements in support of next-step fusion devices 09:10 EX/3-3G. Xu China Long pulse ELM-FREE H-Mode regime with feedbackcontrolled detachment under boronized metal wall in EAST 09:30 China EX/3-4J. Huang Development of steady-state operation scenarios with full tungsten limiter/divertor in ITER-relevant configuration on

Development of high-performance long-pulse discharge in

Korea

### IFE/1 Inertial Fusion Energy

**EAST** 

H. Kim

**KSTAR** 

EX/3-5

Chairperson: Sylvie Jacquemot (France) (10:40-12:20)

10:40	IFE/1-1	Y. Arikawa High gain fusion burning in inertial confinement fusion	Japan
11:00	IFE/1-2	plasma S. Le Pape Source of Pathways to France from Joseph France	France
11:20	IFE/1-3	Foams as a Pathway to Energy from Inertial Fusion (FoPIFE): overview of recent results  N. Borisenko	Russia
	,	Targets developed in the 21st century at the P.N. Lebe- dev Physical Institute of RAS to study the extreme matter	
11:40	IFE/1-4	physics using high-power laser facilities <b>F. Wu</b>	China
		Prediction of the implosion dynamics via AI enhanced simulations for the Double-Cone Ignition Scheme	

09:50

12:00	IFE/1-5	J. Ogino	Japan
		Development of innovative repeatable power laser for laser	
		fusion	

#### TH/3 & EX/4

# Disruption, RE, Stellarator

Chairpei	(14:00-15:40)		
14:00	TH/3-1	D. Hu JOREK simulation of injection assimilation and radiation	China
		asymmetry during ITER H-mode dual SPIs	
14:20	TH/3-2	H. Bergstrom	Germany
		Hybrid kinetic-MHD studies of runaway electron beam termination events	
14:40	TH/3-3	Y. Lee	Korea
	,	Modelling of mildly relativistic runaway electrons- development of reduced-kinetic model and validation	
15:00	TH/3-4a	in KSTAR ohmic startup C. Zhu	China
10.00	111,0 10	A novel method to optimize omnigenity like quasisymmetry for stellarators	Callana
	TH/3-4b	J.L. Velasco Garasa	Spain
		Piecewise omnigenous fields: a radically new family of op-	
15:20	EX/4-1	timized magnetic fields for stellarator reactors  C. Killer  Drift flows impact island divertor operation in Wendelstein 7-X	Germany

#### TEC/2 & EX/5

## **PFC and Materials**

Chairperson: Gianfranco Federio	ci (Germany)
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(16:10-17:50)

16:10	EX/5-1	D. Matveev	Germany
		Analysis of fuel retention and recovery in JET with BE-W	-
		wall	_
16:30	TEC/2-1	V. Lamaison	France
		WEST operation - reliability and availability of a long pulse	
16.50	TEC (2.2	fusion tokamak	F
16:50	TEC/2-2	M. Richou  Actively scaled plasma facing components design for W7 Y	France
		Actively cooled plasma facing components design for W7-X and JT-60SA in support of the ITER divertor	
	TEC/2-		
17:10	3a	G.M. Polli	Italy
		The Divertor Tokamak Test Facility: Machine design con-	
		struction and commissioning	
	TEC/2- 3b	S. Roccella	Italy
		Design and qualification activity of the first divertor of the DIVERTOR TOKAMAK TEST FACILITY	
17:30	TEC/2-4	J. Du	China
17.50	ILC/2 4	Performance evaluation of tungsten fiber-reinforced tung-	Cimia
		sten composites developed at SWIP for application in nu-	
		clear fusion reactors	

# Friday 17 October 2025

TH/4		Next Generation Modelling	
Chairpers	on: Eisung	Yoon (Korea)	(08:30-09:50)
08:30	TH/4-1	N. Aiba H-mode operation scenarios in JT-60SA initial research phase predicted by integrated core-pedestal-SOL/divertor simulation	Japan
08:50	TH/4-2	H. Meyer UK STEP towards a fusion power plant plasma	UK

09:10	TH/4-3	D. Kennedy A TALE OF TWO (VISCO)CITIES Electromagnetic Turbulence and Transport Bifurcations: Implications for Next-Generation Fusion Power Plants	UK
09:30	TH/4-4	<b>R. Zhao</b> Globall dispersion and nonlinear dynamics in plasmas modeled for JT-60U strongly reversed magnetic shear configuration exhibiting a signature of ITBS from L-Mode characteristics	Japan



# **Operation Control**

08:30	TEC/3-1	Y. Morishita	Japan
		Development of a data assimilation system ASTI toward	
00.50	TEC (2.0	DIGITAL TWIN control of fusion plasma	ъ.
08:50	TEC/3-2	A. Krasilnikov	Russia
		TRT plasma control complexes conceptual design on the	
		base of the ITER fusion technology developement	
09:10	TEC/3-3	S. Jachmich	ITER
		ITER disruption mitigation system design and application	
		strategy	
09:30	EX/6-1	L. Zeng	China
		Thermal quench dynamics and heat flux distribution during	
		massive-impurity-injection triggered disruption in EAST	
09:50	TH/5-1	C. Liu	China
		Analysis and simulation of effective runaway electron miti-	
		gation using a passive coil in J-TEXT tokamak	
		0 01	

# EX/7 & Scenarios and Control TH/6

Chairperson: Michael Porton (UK)

(08:30-10:10)

Chairperson: Wulyu. Zhong (China)	(10:40-12:20)
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10:40	EX/7-1	T. Wakatsuki	Japan
		Development of Low Inductive Electric Field Plasma Start- up in JT-60SA	
11:00	TH/6-1	H. Kim  Multi-machine validation of plasma initiation modelling	Korea
		and prospects for future devices	
11:20	EX/7-2	S. Inoue	Japan
		Development of equilibrium control simulattor and experi-	
		mental validation of advanced ISO-Flux equilibrium control during the first operational phase of JT-60SA	
11:40	EX/7-3	T. Kinoshita	Japan
	,	Direct control of turbulence for improved plasma confine-	, 1
		ment	
12:00	EX/7-4	M. Baruzzo	Italy
		Plasma control experiments in JET deuterium-tritium plas-	
		mas	

#### TH/7 & EX/8

# **Burning Plasma**

Chairperson: Alexander Melnikov (Russia) (10:40-12:20)

10:40	TH/7-1	J. Wang Comprehensive Simulations of Bursting and Non-Bursting	Japan
		Alfvén Waves in ICRF Heated Tokamak Plasmas	
11:00	TH/7-2	F. Zonca	Italy
		Theory and simulation of phase space transport in burning	
11:20	EX/8-1	plasma S. Sharapov	UK
11.20	L/(O I	Fusion alpha-particle -driven Alfen eigenmodes in JET DT	CK
		plasmas: experiments and theory	
11:40	TH/7-3	A. Könies	Germany
		Turbulence, zonal flows, and global modes in burning plas-	_
		mas: code development and simulations	
12:00	EX/8-2	G. Xiao	China
		Advancing Tritium Fueling for DT Fusion in HL-3: Innova-	
		tions in SMBI Techniques and Physics-Based Tritium Fuel-	
		ing Strategies	

# TEC/4 Fusion Nuclear Technology

Chairperson: Moises Weber (Spain) (14:00-15:40)

14:00	TEC/4-1	R. Villari	Italy
4.4.00		Neutronics for ITER nuclear phase: insights and lessons learnt from JET DT operation	_
14:20	TEC/4-2	E. Bernard  Anticipating tritium impact and transfer in fission and fusion power plants	France
14:40	TEC/4-3	I. Palermo Overview of the DCLL breeding blanket for HELIAS 5-B and	Spain
15.00		further steps towards a novel QI device	17
15:00	TEC/4-4	Y.H. Park Experimental study on tritium release from LI2TIO3 pebbles as tritium breeder through international collaboration between KOREA and CHINA	Korea
15:20	TEC/4-5	T. Akagi Accomplishment of high duty cycle beam commissioning of Linear IFMIF Prototype Accelerator (LIPAc) at 5 MeV, 125 mA D+	Japan

#### TH/8 & EX/9

# Tungsten

Chairperson: Marco Wischmeier	(Germany)	(16:10-17:30)
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16:10	TH/8-1	<b>D. Fajardo</b> Theory-based integrated modelling of tungsten transport:	Germany
		validation in present-day tokamaks and predictions for	
16:30	EX/9-1	ITER Y. Corre	France
10.50	EA/ )-1	Testing tungsten plasma facing components in WEST and AUG tokamaks: Lessons for ITER	Trance
16:50	TH/8-2	H. Kumpulainen	Germany
		Simulation of tungsten erosion and edge-to-core transport	•
		in neon-seeded JET plasmas	
17:10	EX/9-2	J. Hobirk	Germany
		Tungsten limiter Start-up experiments in different boroniza-	
		tion states in support of ITER	

### TEC/5 & IAC/1

Chairperson: Ge Zhuang (China)

# **Enabling Technologies**

16:10	TEC/5-1	<b>R. Skilton</b> Overview of recent results in research tacking remote main-	UK
16:30	TEC/5-2	tenance challenges of future fusion energy devices <b>K. Tsuchiya</b> Performance of JT-60SA superconducting magnet operation in integrated commissioning test	Japan
16:50	TEC/5- 3a	H. Yamazaki	Japan
		Results of electron cyclotron heating and current drive system operation in the integrated commissioning phase on JT-60SA	
	TEC/5- 3b	T. Shinya	Japan
		First performance test of multi-frequency gyrotron for ITER and fusion devices	

(16:10-17:30)

17:10	IAC/1-1	H. Liu	China
		Construction Progress of Chinese First Quasi-axisymmetric	
		Stellarator (CFQS) and Preliminary Results in the CFQS-	
		Test Device	

# **Saturday 18 October 2025**

EX/10 & PD/1	Transport Barriers, Post-Deadline
& PD/1	Transport Barriers, Post-Deadline

Chairperson: Emmanuele Tistrone (France)		(08:30-10:10)	
08:30	EX/10-1	C. Maggi Core and edge transport of scenario with internal transport barrier in tritium and deuterium-tritium plasmas in JET with BE/W wall	
08:50	EX/10-2	Y. Jeon  Development of high poloidal beta scenario for long-pulse operation in collaboration between DIII-D and KSTAR	Korea
09:10	EX/10-3	L. Frassinetti Peeling limited pedestals in JET, MAST-U and TCV: effect of density and isotope mass in deuterium and tritium-rich plasma on pedestal structure and stability and validation of pedestal predictions for ITER.	
09:30	PD/1-1	K. Ida Observation of core ion energy increase caused by the Landau damping of MHD wave in the periphery of LHD plasma	
09:50	PD/1-2	T. Lunt First campaign with alternative divertor configurations in ASDEX Upgrade	Germany

# OV/5 Innovative Facilities and Technologies

Chairperson: Hidenobu Takenaga (Japan) (10:40-12:45)

10:40	OV/5-1	R. Lawless	UK
		Overview of UKAEA's integrated fusion technology pro-	
		grammes, emphasising a digital first strategy	_
11:05	OV/5-2a	A. Ibarra	Spain
		Overview of the DONES Experimental Programme	
	OV/5-2b	K. Hasegawa	Japan
		Overview of achievements and outlook of the	•
		IFMIF/EVEDA project	
11:30	OV/5-3	O. Asunta	UK
		Overview of ST40 results and future: expanding the physics	
		basis of high-field spherical tokamaks	
11:55	OV/5-4	N. Bakharev	Russia
		Recent advances at the Globus-M2 tokamak	
12:20	OV/5-5	Y. Sentoku	Japan
		Strategic plan to demonstrate heatwave-driven laser fusion	, 1
		with fast ignition scheme	

# PWF/1 Pathways to Fusion

Chairperson: Takashi Inoue (Japan) (14:00-15:40)

PWF/1-1	F. Warmer	Germany
	Towards a Stellarator Fusion Reactor: Achievements of the	•
	European Stellarator Program	
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PWF/1-4		Korea
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	PWF/1-2 PWF/1-3 PWF/1-4	Towards a Stellarator Fusion Reactor: Achievements of the European Stellarator Program  PWF/1-2 H. Wilson  STEP: Driving a pathway to accelerated fusion delivery  PWF/1-3 N. Lopez  Tokamak Energy's high temperature superconducting magnet spherical tokamak fusion pilot plant concept

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Chairperson: Elisabeth Wolfrum (Germany)

Chairperson: Elisabeth Wolfrum (Germany) (15:40-17:00)

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### SYSTEM ARCHITECTURE FOR ACTUATOR MANAGEMENT IN ITER PCS

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IAEA-CN-316-2619

### Fusion Twin Platform: An Innovative Tool for Fusion Research and Education

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### Neutron-Physical Characteristics of Blanket of Hybrid Fusion Neutron Source based on Solution of Thorium Nitrate and Minor Actinides in Heavy Water

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### Performance Optimisation of Tokamak Operation in ASDEX Upgrade Through Novel Feedback Control Capabilities

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# Runaway electron avalanche and energy deposition during scraping-off of vertically unstable disruption generated runaway beams

#### Jose Martin-Solis

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## USE OF SHIELDING BENCHMARK EXPERIMENT DATABASE (SINBAD) TO IDENTIFY NUCLEAR DATA STATUS AND GUIDE FUTURE EXPERIMENTAL ACTIVITIES

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### Impurity Accumulation and Radiation Dynamics in advanced Scenarios in W7-X

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

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### STATUS OF Đ¢ĐĐ DEVELOPMENT OF A TRITIUM FUEL CYCLE FOR LONG-TERM TOKAMAK OPERATION

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### ELIMINATING TOKAMAK MAJOR DISRUPTIONS WITH FEEDBACK

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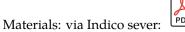
### Advanced Magnetic Plasma Control Enabled by Reinforcement Learning

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

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### NEOCLASSICAL THEORY ON LOW FREQUENCY DRIFT ALFVÃN WAVES

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

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### CSMC Power Supply System Completes DC 48kA Steady State Output Experiment

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# The benchmark database of experiments, nuclear, and technological data for hybrid fusion systems with various types of blankets

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# AN OVERVIEW OF THE FIRST EXPERIMENTAL RESULTS WITH DIVERTOR CONFIGURATION DISCHARGES IN THE KTM TOKAMAK

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### OBSERVATION AND CONTROL OF 3D HEAT FLUX ON THE PLASMA FACING COMPONENT IN WENDELSTEIN 7-X

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### Modelling of H-mode EAST edge plasma with impurity seeding by SOLPS-ITER 3.2.0 on wide grid

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# PHYSICS BASIS OF DISCREPANCIES BETWEEN TEMPERATURE MEASUREMENTS BY ECE AND THOMSON SCATTERING IN HIGH PERFORMANCE PLASMAS ON JET, EAST AND DIII-D

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IAEA-CN-316-2673



# USE OF NUCLEAR SPECTROMETRY TO MONITOR FUSION RATE, FAST PARTICLES AND RUNAWAY ELECTRONS IN TOKAMAK PLASMAS

#### **Aleksandr Shevelev**

Aleksandr Shevelev (Ioffe Institute), Russia

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IAEA-CN-316-2677

### JOREK simulation of injection assimilation and radiation asymmetry during ITER H-mode dual SPIs

#### Di Hu

Di Hu (Beihang University), China

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IAEA-CN-316-2678

### JOREK contributions to the predictive understanding of transient phenomena in future tokamaks and stellarators

#### Matthias Hoelzl

Matthias Hoelzl (Max Planck Institute for Plasma Physics), Germany

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IAEA-CN-316-2679

### 10-HZ-INJECTION AT A LASER FOCUS OF TARGETS ACCELERATED INTO SPRING-HTSC-MAGLEV SYSTEM

#### Elena Koresheva



# THE STUDY OF ALFVÃN EIGENMODES ON THE SPHERICAL TOKAMAK GLOBUS-M2 USING DOPPLER BACKSCATTERING

#### Anna Ponomarenko

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IAEA-CN-316-2681



### FIRST RESULTS OF EHO-LIKE FLUCTUATIONS STUDIES AT THE SPHERICAL TOKAMAK GLOBUS-M2

#### Alexander Yashin

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IAEA-CN-316-2682



### Research on the relationship between microstructure and mechanical properties of CHSN01 jacket under cold deformation

#### Yifei Wu

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IAEA-CN-316-2686

# QUANTITATIVE EVALUATION OF BEAM LOSS BASED ON RADIATION DETECTION IN HIGH-DUTY BEAM COMMISSIONING OF LIPAC RFQ

#### Kohki Kumagai

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IAEA-CN-316-2688



### Development of Low Inductive Electric Field Plasma Start-up in JT-60SA

#### Takuma Wakatsuki

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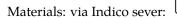
### DISRUPTIONS AND MHD INSTABILITIES OBSERVED IN THE INITIAL OPERATION PHASE OF JT-60SA

### Tatsuya Yokoyama

Tatsuya Yokoyama (Naka Institute, National Institutes for Quantum and Radiological Science and Technology), Japan

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IAEA-CN-316-2690



### Effect of edge-localized mode simulation on detached plasma in the divertor simulation experimental module of GAMMA 10/PDX

### Masayuki Yoshikawa

Masayuki Yoshikawa (University of Tsukuba), Japan

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IAEA-CN-316-2691

### CHARACTERISTICS OF RUNAWAY ELECTRON LOSS IN THE INTEGRATED COMMISSIONING OF JT-60SA

#### Shuhei Sumida

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IAEA-CN-316-2692



## RESULTS OF ELECTRON CYCLOTRON HEATING AND CURRENT DRIVE SYSTEM OPERATION IN THE INTEGRATED COMMISSIONING PHASE ON JT-60SA

#### Hibiki Yamazaki

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IAEA-CN-316-2693

### Development of in-vessel rail deployment and connection method for ITER Blanket remote maintenance

#### Yuto NOGUCHI

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#### Development of pure boron pellet for fusion reactor

#### Hiroyuki Noto

Hiroyuki Noto (National Institues for Fusion Science), Japan

Corresponding Author: Hiroyuki Noto, HiroyukiNoto < noto.hiroyuki@nifs.ac.jp >

IAEA-CN-316-2695

#### Regime of Electron Internal Transport Barrier in High-Density NBI Heated Plasmas of Heliotron J

#### Shinji Kobayashi

Shinji Kobayashi (IAE, Kyoto Univ.), Japan

Corresponding Author: Shinji Kobayashi, ShinjiKobayashi < kobayashi@iae.kyoto - u.ac.jp >

IAEA-CN-316-2696

### **Experimental identification of coexisting local and non-local turbulence**

#### Naoki Kenmochi

Naoki Kenmochi (National Institute for Fusion Science), Japan

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IAEA-CN-316-2697

### Frequency Hysteresis of MHD Instabilities in Helical and Tokamak Plasmas

#### Yuki Takemura

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IAEA-CN-316-2698

## Automated design rationalization of robot component configuration for in-vessel task of ITER Blanket Remote Handling System

#### Takuya Iwamoto

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IAEA-CN-316-2699



### Comprehensive Simulations of Bursting and Non-Bursting Alfvén Waves in ICRF Heated Tokamak Plasmas

#### **JIALEI Wang**

JIALEI Wang (National Institute for Fusion Science), Japan

 ${\it Corresponding Author: JIALEIWang, JIALEIWang < wang. jialei@nifs.ac.jp > }$ 

IAEA-CN-316-2700



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

#### Weiye Xu

Weiye Xu (Institute of Plasma Physics, Chinese Academy of Sciences), China

Corresponding Author: Weiye Xu, WeiyeXu < xuweiye@ipp.cas.cn >

IAEA-CN-316-2701

### Effect of ECH on Energetic-Particle-Driven MHD Modes in Heliotron J

#### Kazunobu Nagasaki

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IAEA-CN-316-2702

### First performance test of multi-frequency gyrotron for ITER and fusion devices

#### Hibiki Yamazaki

Hibiki Yamazaki, Japan

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### Progress on nonlinear MHD modeling of i¬ux pumping and hybrid scenario for ASDEX Upgrade plasmas

#### Haowei Zhang

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IAEA-CN-316-2705



### MEASUREMENT OF NUCLEAR REACTION CROSS-SECTION FOR THERMONUCLEAR APPLICATIONS

#### Marina Bikchurina

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IAEA-CN-316-2706

## Observation of non-collisional ion heating in helical plasmas under dominant electron heating condition by neutral beam injection on LHD

#### Kazuo Toi

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### Verification of energetic and angular distributions of nuclear fusion products in plasmas

#### **Pavel Goncharov**

Pavel Goncharov (Peter the Great St. Petersburg Polytechnic University), Russia

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### Prediction of the implosion dynamics via AI enhanced simulations for the Double-Cone Ignition Scheme

#### Fuyuan Wu

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IAEA-CN-316-2709

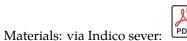


#### Dynamic Evolution of Multi-Physics-Dependent Non-Uniform Inter-Turn Contact Resistivity in No-Insulation REBCO Magnets: Modeling and Experimental Validation

#### Shuowei Gao

Shuowei Gao, China

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### Experimental study on configuration dependence of turbulent transport on LHD

#### Kenichi Nagaoka

Kenichi Nagaoka (National Institute for Fusion Science), Japan

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IAEA-CN-316-2712



### CURRENT REARRANGEMENT IN MERGING START-UP OF SPHERICAL TOKAMAK PLASMAS

#### Michiaki Inomoto

Michiaki Inomoto (The University of Tokyo), Japan

 ${\bf Corresponding\ Author:\ Michiaki\ Inomoto}, Michiaki\ Inomoto < inomoto@k.u-tokyo.ac.jp>$ 

IAEA-CN-316-2713

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

#### Haruhisa Nakano

 $\label{lem:hardinal_science} Haruhisa\ Nakano\ (National\ Institute\ for\ Fusion\ Science,\ National\ Institutes\ of\ Natural\ Sciences),\ Japan\ Corresponding\ Author:\ Haruhisa\ Nakano\ ,\\ HaruhisaNakano\ < nakano.haruhisa@nifs.ac.jp\ >$  IAEA-CN-316-2714

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

#### Masashi Kisaki

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IAEA-CN-316-2715

## OPTIMAL DESIGN OF FAST PLASMA BOUNDARY CONTROL CONSIDERING VERTICAL INSTABILITY FEATURES USING IN-VESSEL COILS IN JT-60SA

#### Shinichiro Kojima

Shinichiro Kojima, Japan

IAEA-CN-316-2716



### ANALYSIS OF FUEL RETENTION AND RECOVERY IN JET WITH BE-W WALL

#### **Dmitry Matveev**

Dmitry Matveev (Forschungszentrum Juelich), Germany

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IAEA-CN-316-2718

### PROGRESS IN PLASMA-WALL INTERACTIONS MODELLING FOR EU-DEMO

#### Sebastijan Brezinsek

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 ${\it Corresponding Author: Sebastijan Brezinsek, Sebastijan Brezinsek < s.brezinsek @fz-juelich.de > 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |$ 

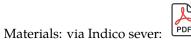
IAEA-CN-316-2719

#### Pulse Design Simulator for JT-60SA

#### **Emmanuel Joffrin**

Emmanuel Joffrin (CEA), France

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### Hybrid kinetic-MHD studies of runaway electron beam termination events

#### Hannes BergstrĶm

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IAEA-CN-316-2721

### The impact of a flying collector on runaway electrons during current disruption in a tokamak

#### **Boris Kuteev**

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## INTERMITTENT MERGING OPERATIONS OF SPHERICAL TOKAMAK PLASMAS FOR RECONNECTION HEATING AND HELICITY INJECTION

#### Yasushi Ono

Yasushi Ono (University of Tokyo), Japan

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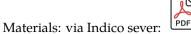
IAEA-CN-316-2724



### PERFORMANCE OF JT-60SA SUPERCONDUCTING MAGNET OPERATION IN INTEGRATED COMMISSIONING TEST

#### Katsuhiko TSUCHIYA

Katsuhiko TSUCHIYA (QST, Naka), Japan



### Laser-driven non-thermal aneutronic Proton-Boron fusion reactions in solid-density plasma

#### Ryunosuke Takizawa

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IAEA-CN-316-2728



### Bifurcated particle transport states driven by regulatory energetic ions in LHD plasmas

#### Masaki Nishiura

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IAEA-CN-316-2729

## EXPERIMENTAL UPDATE ON THE COUNTER-ILLUMINATING FAST IGNITION SCHEME USING THE KJ-CLASS ULTRA-INTENSE LASER LFEX

#### Yoshitaka Mori

Yoshitaka Mori (The Graduate School for the Creation of New Photonics Industries), Japan

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IAEA-CN-316-2730



### 10-HZ LASER BEAM STEERING AND ILLUMINATION FOR FREE-FALL TARGETS

#### Kazuki Matsuo

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IAEA-CN-316-2731

### FIRST JT-60SA PLASMA OPERATION AND PLANS IN VIEW OF ITER AND DEMO

#### Jeronimo Garcia

Jeronimo Garcia (CEA IRFM), France

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# INVESTIGATING THE FORMATION AND GROWTH OF FUZZY NANO-STRUCTURES DUE TO THE INTERACTION OF HELIUM PLASMA WITH TUNGSTEN UTILIZING A DC GLOW DISCHARGE PLASMA DEVICE

#### Faridodin Sedighi

Faridodin Sedighi (Nuclear Science and Technology Research Institute (NSTRI), Atomic Energy Organization of Iran (AEOI)), Iran

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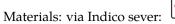
IAEA-CN-316-2734

# Material selection for mirror substrate compatible with high-power laser beam utilized by Tritium-monitor diagnostic in ITER

#### Sebastijan Brezinsek

Sebastijan Brezinsek (Institute of Fusion Energy and Nuclear Waste Managementâ" Plasma Physics, Forschungszentrum Jülich GmbH, Germany), Germany

IAEA-CN-316-2736



# STUDY ON THE THERMAL PERFORMANCE OF ITER TUNGSTEN DIVERTOR MONOBLOCK USING NANOFLUID FOR COOLING ENHANCEMENT

#### Salah El-Din El-Morshedy

Salah El-Din El-Morshedy (Egyptian Atomic Energy Authority), Egypt

 $Corresponding \ Author: \ Salah \ El-Din \ El-Morshedy, \ Sa$ 

IAEA-CN-316-2737

### DEVELOPMENT OF A FAMILY OF RAYS TRACING CODE BASED ON A NON-COMMUTATIVE KINETIC RAY SYSTEM

#### Kota Yanagihara

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IAEA-CN-316-2738



### DEVELOPMENT OF DATA ASSIMILATION SYSTEM ASTI TOWARD DIGITAL TWIN CONTROL OF FUSION PLASMA

#### Yuya Morishita

Yuya Morishita (Kyoto University), Japan

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IAEA-CN-316-2739

### Numerical Analysis of Electron Distribution Function under Electron Cyclotron Heating during Tokamak Start-up

#### Naoto Tsujii

Naoto Tsujii (The University of Tokyo), Japan

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IAEA-CN-316-2740



### APPLICATIONS OF IN-SHOT CONTINUOUS NBI CONTROL SYSTEM TO FIRE MODE IN KSTAR

#### Seulchan Hong

Seulchan Hong (Korea institute of Fusion Energy (KFE)), Korea, Republic of

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IAEA-CN-316-2741

# Recovery Behavior of High-Purity Cubic SiC for First-Wall Applications in Fusion Reactors by Post-Irradiation Annealing After Low-Temperature Neutron Irradiation

#### Mohd Idzat Bin Idris

Mohd Idzat Bin Idris (Department of Applied Physics, Faculty Science and Technology, Universiti Kebangsaan Malaysia), Malaysia

 $\ \, {\it Corresponding Author: Mohd Idzat Bin Idris, Mohd Idzat Bin Idris < idzat@ukm.edu.my > } \\$ 

IAEA-CN-316-2742



### On the selfconsistency between ray-tracing/Fokker-Planck and the toroidal MHD equilibrium for the Lower Hybrid current drive

#### Yves Peysson, Riccardo Saura

Yves Peysson (CEA), Riccardo Saura (CEA), France

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IAEA-CN-316-2743

### Hierarchy of turbulent transport models with the SOLEDGE3X code

#### **Hugo Bufferand**

Hugo Bufferand (CEA), France

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IAEA-CN-316-2744

### LIQUID METAL DROPLETS SYSTEMS FOR APPLICATION IN TOKAMAKS AND PLASMA DEVICES

#### **Alexey Dedov**

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IAEA-CN-316-2745



# DETERMINATION OF W CHARACTERISTICS IN WEST BY MEANS OF EXTREME UV EMISSION AND ARTIFICIAL INTELLIGENCE

#### Pierre Manas

Pierre Manas (CEA-IRFM), France

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IAEA-CN-316-2746



# How MeV-range ions and high $\hat{I}^2$ will shape the core plasma dynamics of fusion power plants

#### Samuele Mazzi

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IAEA-CN-316-2747

### Analytical approach to calculation of disruption-induced vertical force on the tokamak wall

#### Vladimir Pustovitov

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IAEA-CN-316-2748



### FIRST SOLPS-ITER WIDE GRID SIMULATIONS OF THE ITER BURNING PLASMA SCRAPE-OFF LAYER

#### Elizaveta Kaveeva

Elizaveta Kaveeva (Peter the Great St. Petersburg Polytechnic University), Russia

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IAEA-CN-316-2749

### FAST: A FUSION ENERGY SYSTEMS INTEGRATION TEST FACILITY

#### Akira Ejiri

Akira Ejiri (Graduate School of Frontier Sciences, The University of Tokyo), Japan

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IAEA-CN-316-2750



## Validation of Tungsten Nuclear Data Using the TUD-W benchmark

#### Fabbri Fabbri

Fabbri Fabbri (Fusion For Energy), Spain

 ${\it Corresponding Author: Fabbri Fabbri, Fabbri Fabbri} < marco. fabbri@f4e.europa.eu>$ 

IAEA-CN-316-2751

# INVESTIGATION OF FILAMENT DYNAMICS USING HIGH-SPEED VIDEO SHOOTING IN THE GLOBUS-M2 TOKAMAK

#### Vladimir Timokhin

Vladimir Timokhin (Saint-Petersburg State Polytechnical University), Russia

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IAEA-CN-316-2752



### DEVELOPMENT OF ITER HIGH-FIDELITY PLASMA SIMULATOR BASED ON JINTRAC AND DINA, AND STRATEGY FOR VALIDATION

#### Sun Hee KIM

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IAEA-CN-316-2753

### MULTI-MACHINE VALIDATION OF PLASMA INITIATION MODELLING AND PROSPECTS FOR FUTURE DEVICES

#### Hyun-Tae Kim

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IAEA-CN-316-2754



## GYROKINETIC LINEAR SIMULATION OF HOT ION MODE IN GLOBUS-M2 SPHERICAL TOKAMAK

#### Evgenii Kiselev

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IAEA-CN-316-2755

### Intra-shot Tools for Plasma Scenario Optimization and Magnetic Control

#### Massimiliano Mattei

Massimiliano Mattei (CREATE/Universit $\tilde{A}$  di Napoli Federico II), Italy

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IAEA-CN-316-2757



## THE DIVERTOR TOKAMAK TEST FACILITY: MACHINE DESIGN, CONSTRUCTION AND COMMISSIONING

#### Gian Mario Polli

Gian Mario Polli (ENEA, DTT Scarl), Italy

IAEA-CN-316-2758

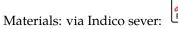
## Key dependencies for the radial density decay in the far-SOL of JET H-mode plasmas

#### **Christian Perez von Thun**

Christian Perez von Thun (IPPLM), Poland

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IAEA-CN-316-2760



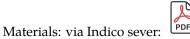
## Simulation of tungsten erosion and edge-to-core transport in neon-seeded JET plasmas

#### Henri Kumpulainen

Henri Kumpulainen (FZJ), Germany

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IAEA-CN-316-2761



# 3D MODELLING OF THERMAL LOADS DURING UNMITIGATED VERTICAL DISPLACEMENT EVENTS IN ITER AND JET

#### Francisco Javier Artola Such

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IAEA-CN-316-2762



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

#### Ferran Albajar

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IAEA-CN-316-2763

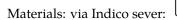
### Starting DTT infrastructures construction at ENEA Frascati Site

#### Gianmario Polli

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IAEA-CN-316-2764





### Impact of Stark Broadening on Ion Temperature Measurements in the ITER Divertor Plasma

#### Motoshi Goto

Motoshi Goto (National Institute for Fusion Science), Japan

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IAEA-CN-316-2765

### CHANGE OF WALL MATERIAL FROM BERYLLIUM TO TUNGSTEN IN THE NEW ITER BASELINE: PHYSICS BASIS, IMPLICATIONS FOR RESEARCH PLAN AND WALL DESIGNS FOR ITS OPERATIONAL PHASES

#### **Alberto Loarte**

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IAEA-CN-316-2766

## Tests of ultrasonic lithium injector with external lithium supply system on tokamak T-11M

#### Anastasiia Shcherbak

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IAEA-CN-316-2767

### INVESTIGATING LONG-DURATION PLASMA OPERATION WITH THE INTERNATIONAL MULTI-MACHINE DATABASE

#### xavier Litaudon

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IAEA-CN-316-2770



### DISCOVERY OF CROSS-SCALE NONLINEAR INTERACTION AND BIFURCATION IN MULTI-SCALE TURBULENCE IN LHD PLASMA

#### Tokihiko Tokuzawa

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IAEA-CN-316-2778

## $Hybrid\ simulation\ of\ Alfv\tilde{A}@n\ eigenmodes\ caused\ by\ multiple$ $fast\ ion\ species\ in\ the\ Large\ Helical\ Device$

#### RYOSUKE SEKI

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IAEA-CN-316-2779

# EDGE MAGNETIC ISLANDS AND ITS APPLICATION TO THE DEVELOPMENT OF ADVANCED DIVERTOR CONFIGURATION ON THE J-TEXT TOKAMAK

#### Yunfeng Liang

Yunfeng Liang (Forschungszentrum JÃ1/4lich GmbH, Germany), Germany

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IAEA-CN-316-2781

### THE SCALING OF THE ION HEATING AND ELECTROSTATIC POTENTIAL IN SPHERICAL TOKAMAK

#### Tara Ahmadi

Tara Ahmadi (University of Tokyo), Japan

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IAEA-CN-316-2782



### NON-INDUCTIVE PLASMA START-UP USING ELECTRON BERNSTEIN WAVE MODE-CONVERTED FROM ELECTRON CYCLOTRON WAVE LAUNCHED FROM HIGH-FIELD SIDE ON SPHERICAL TOKAMAK, QUEST

#### kazuaki Hanada

kazuaki Hanada (Advanced Fusion Research Center, Research Institute for Applied Mechanics, Kyushu University), Japan

IAEA-CN-316-2783



# DIRECT CONTROL OF TURBULENCE FOR IMPROVED PLASMA CONFINEMENT

#### Toshiki Kinoshita

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IAEA-CN-316-2784



# DEVELOPMENT OF INNOVATIVE REPEATABLE POWER LASER FOR LASER FUSION

#### Jumpei Ogino

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# ELECTRON DENSITY WINDOW ON THE SUPPRESSION OF SPONTANEOUS NEOCLASSICAL TEARING MODE WITH HIGH FRACTION OF BOOTSTRAP CURRENT

#### Tong Liu

Tong Liu (Dalian University of Technology), China

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IAEA-CN-316-2786

# OBSERVATION OF NONLINEAR COUPLING OF WAVES EXCITED AT DISTINCT REGIONS OF OVERLAPPING DUAL LOWER HYBRID AND ION CYCLOTRON RESONANCES

#### Hiroe Igami

Hiroe Igami (National Institute for Fusion Science), Japan

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#### Material migration and erosion of plasma-facing components in the full-tungsten WEST tokamak during its Phase 1 and Phase 2 operations

#### Antti Hakola

Antti Hakola (VTT Technical Research Centre of Finland Ltd.), Finland

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IAEA-CN-316-2788

# The Divertor Tokamak Test project: progress towards the initial operation

#### Gianmario Polli

Gianmario Polli (DDT Project), Italy

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# A novel computation of the linear plasma response to a resonant error field in single-fluid visco-resistive MHD and application to the RFXmod2 tokamak

#### paolo zanca

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

#### Saul Garavaglia

Saul Garavaglia (Institute for Plasma Science and Technology, National Research Council (ISTP-CNR), Milano, Italy), Italy

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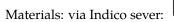


# INVESTIGATION OF PLASMA PARAMETERS IN SAWTOOTH OSCILLATION BY ABSOLUTE INTENSITY OF SOFT X-RAY EMISSION IN JT-60SA INTEGRATED COMMISSIONING PHASE

#### Ryuichi Sano

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# INVESTIGATION OF THE MAGNETIC FLUX PUMPING EFFECT IN MAST UPGRADE

#### Sam Blackmore

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IAEA-CN-316-2794

# INTERPRETING STRUCTURES OBSERVED IN PELLET ABLATION PROFILES IN THE STELLARATOR TJ-II

#### Kieran Joseph Mc Carthy

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IAEA-CN-316-2795



#### HIGH-FIELD-SIDE HIGH-DENSITY REGION IN GLOBUS-M2 DIVERTOR

#### Eugene Mukhin

Eugene Mukhin (Ioffe Institute), Russia

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IAEA-CN-316-2796

# Catalogue-based reverse engineering: for AI-based modelling in fusion remote maintenance equipment design

#### William Brace

William Brace (VTT), Finland

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IAEA-CN-316-2797



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

#### Zetao Lin

Zetao Lin (Aix-Marseille University), France

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IAEA-CN-316-2798

# Experimental analyses and numerical modelling of trace neon shattered pellet injection discharges on JET

#### Mengdi Kong

Mengdi Kong (EPFL-SPC), Switzerland

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IAEA-CN-316-2799



# PROGRESS IN MULTIPLE-MIRROR PLASMA CONFINEMENT AT THE GOL-NB FACILITY

#### Sergey Polosatkin

Sergey Polosatkin (Budker Institute of Nuclear Physics), Russia

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# Effect of collision processes in divertor plasma on the tokamak operational window

#### Daisuke Umezaki

Daisuke Umezaki (National Institutes for Quantum Science and Technology), Japan

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IAEA-CN-316-2801

# RECENT PROGRESS IN THE PILOT GAMMA PDX-SC SUPERCONDUCTING MIRROR

#### Mizuki Sakamoto

Mizuki Sakamoto (Plasma Research Center, University of Tsukuba), Japan

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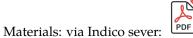
IAEA-CN-316-2802

# EXPLORING ENHANCED PLASMA PERFORMANCE AFTER PELLET INJECTIONS VIA ROTATIONAL TRANSFORM MODULATION IN THE TJ-II STELLARATOR

#### Isabel GarcÃa-Cortés

Isabel GarcÃa-Cortés (CIEMAT), Spain

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

#### **Victor Tribaldos**

Victor Tribaldos (Universidad Carlos III de Madrid), Spain

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IAEA-CN-316-2804

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

#### Stefan Marsen

Stefan Marsen (Max-Planck-Institut f $\tilde{A}^1\!\!/\!\!4$ r Plasmaphysik Teilinstitut Greifswald), Germany

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IAEA-CN-316-2805



# RECENT ADVANCES IN PLASMA CONTROL AND PHYSICS RESEARCH IN THE LARGE HELICAL DEVICE

#### Kenji Tanaka

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IAEA-CN-316-2806

# CRYOPUMP AND FUELLING LOCATION IMPACTS ON UPSTREAM DENSITY AND DETACHMENT ON MAST-U

#### Qian Xia

Qian Xia (Culham Centre for Fusion Energy), United Kingdom

Corresponding Author: Qian Xia, Qian Xia < qian.xia@ukaea.uk >

IAEA-CN-316-2807



#### OVERVIEW OF THE MAST UPGRADE PHYSICS PROGRAMME: TESTING NOVEL CONCEPTS AT LOW ASPECT RATIO TO INFORM FUTURE DEVICES

#### **James Harrison**

James Harrison (United Kingdom Atomic Energy Authority), United Kingdom

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IAEA-CN-316-2808



# MEASUREMENTS OF TOROIDAL ROTATION VELOCITY IN TUMAN-3M TOKAMAK IN NBI AND H-MODE REGIMES

#### Leonid Askinazi

Leonid Askinazi (Ioffe Institute), Russia

IAEA-CN-316-2809

# Performance of Li- and Sn-filled CPS targets under the transient plasma loads in QSPA

#### Igor Garkusha

Igor Garkusha (IPP NSC KIPT), Ukraine

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# Utilizing a visible camera in the first operation phase(s) of a fusion device

#### Tamas Szepesi

Tamas Szepesi (HUN-REN Centre for Energy Research, Institute for Atomic Energy Research), Hungary

IAEA-CN-316-2811



# STUDY OF FAST ION TRANSPORT AND LOSSES DURING ALFVÃN TYPE MHD INSTABILITIES AT GLOBUS-M2

#### Olga Skrekel

Olga Skrekel (Ioffe Institute, Russia), Russia

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IAEA-CN-316-2812

#### STEP Exhaust System â" Architecture and Technology Development overview

#### Songke Wang

Songke Wang (UK Atomic Energy Authority), United Kingdom

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IAEA-CN-316-2813

# JET HYBRID SCENARIO DEVELOPMENT IN D-T FOR IMPURITY SCREENING STUDY

#### damian king

damian king (UKAEA), United Kingdom

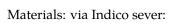
 $Corresponding \ Author: \ damian \ king, \ damianking < damian.king@ukaea.uk > \\$ 

IAEA-CN-316-2814

# OPENMC BASED SIMULATIONS FOR SHUTDOWN DOSE RATE ASSESSMENT IN THE DEMO FUSION REACTOR

#### Roman Afanasenko

Roman Afanasenko, Germany



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

#### Afra Romano

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IAEA-CN-316-2816

#### NUMERICAL ANALYSIS OF PEELING-BALLOONING STABILITY AT VARIOUS TRIANGULARITIES IN GLOBUS-M2

#### Vladimir Solokha

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IAEA-CN-316-2817



#### Multi-Machine Studies of Low-Z Benign Termination of Runaway Electron Beams and Extrapolation to ITER

#### **Umar Sheikh**

Umar Sheikh (SPC-EPFL), Switzerland

Corresponding Author: Umar Sheikh, UmarSheikh < umar.sheikh@epfl.ch >

IAEA-CN-316-2818

# HEATING D IONS TO OPTIMAL D-T FUSION ENERGIES WITH ICRF WAVES

#### **Ernesto Lerche**

Ernesto Lerche (Laboratory for Plasma Physics, ERM/KMS), Belgium

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IAEA-CN-316-2819



#### Dimensional Isotope Scaling of Heat and Particle Transport between JET Deuterium and Tritium L-mode Plasmas

#### **Tuomas Tala**

Tuomas Tala (VTT, Association Euratom-Tekes), Finland

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IAEA-CN-316-2821

#### Fast ion transport simulations for the Spherical Tokamak for Energy Production

#### Antti Snicker

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IAEA-CN-316-2824



# OVERVIEW OF THE EUROPEAN CONTRIBUTION TO THE DIAGNOSTIC EQUIPMENT OF JT-60SA FOR THE NEXT OPERATIONAL PHASES

#### Carlo Sozzi

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IAEA-CN-316-2827

### Strategic plan to demonstrate heatwave-driven laser fusion with fast ignition scheme

#### Yasuhiko Sentoku

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IAEA-CN-316-2828



### MULTI-SCALE INTERATION NEAR LOCKED MAGNETIC ISLANDS AND RESULTING DISRUPTION DELAY IN KSTAR

#### Jayhyun Kim

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IAEA-CN-316-2829

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

#### Kenji Imadera

Kenji Imadera (Kyoto University), Japan

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#### Density Limit Disruption Induced by Core-localized Alfvenic Ion Temperature Gradient Instabilities in a Toroidal Plasma

#### Wei Chen

Wei Chen (Southwestern Institute of Physics, P.O. Box 432 Chengdu 610041, China), China

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IAEA-CN-316-2831

## Noninductive Startup of Spherical Tokamak with Reduced Trapped Electrons by Electron Bernstein Wave Heating and Current Drive on LATE

#### Masaki Uchida

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IAEA-CN-316-2832



### Development of welding, cutting and bolting tools for ITER blanket remote maintenance

#### TAKEYUKI TANAKA

TAKEYUKI TANAKA (National Institutes for Quantum Science and Technology), Japan



### Progress with commissioning the icrh system for the large optimized stellarator wendelstein 7-x

#### Jozef ONGENA

Jozef ONGENA (Plasma Physics Lab, ERM-KMS, Brussels), Belgium

IAEA-CN-316-2834



### MACHINE ENHANCEMENT OF TOKAMAK DEVICE FOR THE JT-60SA NEXT OPERATION

#### HIROKI KAYANO

HIROKI KAYANO (National Institutes for Quantum Science and Technology), Japan

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IAEA-CN-316-2835

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

#### Lei Qi

Lei Qi (Korea Institute of Fusion Energy), Korea, Republic of

Corresponding Author: Lei Qi, LeiQi < qileister@nfri.re.kr >

IAEA-CN-316-2836



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

#### Shinya Maeyama

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# WALL CONDITIONING PLASMA PRODUCTION USING FUNDAMENTAL AND SECOND HARMONIC ELECTRON CYCLOTRON WAVES IN JT-60SA

#### Masakatsu Fukumoto

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IAEA-CN-316-2839



### Investigation of broadband fluctuation-induced inward transport at the edge of HL-2A NBI heated plasma

#### Jie Wu

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IAEA-CN-316-2840

### ESTIMATION OF PLASMA PARAMETERS BASED ON DISCHARGE SETTINGS ON WEST

#### **Chenguang Wan**

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IAEA-CN-316-2841



### Modelling divertor solutions for power exhaust: in-depth experimental validation in TCV

#### Elena Tonello

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IAEA-CN-316-2842

### BORON CARBIDE CERAMICS AS NEUTRON SHIELDING FOR ITER PORT-PLUGS

#### **Andrey Shoshin**

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IAEA-CN-316-2843



#### Global Fluid Turbulence Simulations of Pedestal Relaxation Events in the I-mode regime with GRILLIX

#### **Christoph Pitzal**

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IAEA-CN-316-2844

# Peeling limited pedestals in JET, MAST-U and TCV: effect of density and isotope mass in deuterium and tritium-rich plasma on pedestal structure and stability and validation of pedestal predictions for ITER.

#### Lorenzo Frassinetti

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IAEA-CN-316-2845



### IMPACT OF ION TEMPERATURE ON DETACHED PLASMA IN GAMMA 10/PDX DIVERTOR SIMULATION PLASMA

#### Naomichi Ezumi

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### ITER DISRUPTION MITIGATION SYSTEM DESIGN AND APPLICATION STRATEGY

#### Stefan Jachmich

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IAEA-CN-316-2847

### Scaling of the H-mode electron separatrix density based on engineering parameters from C-Mod, AUG and JET data

#### Davide Silvagni

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IAEA-CN-316-2848

### Bayesian Data Fusion for Enhanced Edge Plasma Density Profile estimation in KSTAR

#### Jaewook Kim

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IAEA-CN-316-2849



### Results from the last DD and DT JET campaigns in the framework of the EUROfusion Tokamak Exploitation activity

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### CONFINEMENT PROPERTY IN THE JT-60SA FIRST OPERATIONAL PHASE

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IAEA-CN-316-2851



#### Developing Open Machine Learning Benchmarks for Tokamak Event Prediction from MAST

#### Prakhar Sharma

Prakhar Sharma (UK Atomic Energy Authority), United Kingdom



# ADVANCES IN EUROPEAN IN-KIND CONTRIBUTIONS TO PLASMA DIAGNOSTICS AND PORT INTEGRATION FOR ITER

#### Clara Colomer, Miguel Perez

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IAEA-CN-316-2854

### Progress and innovations in the TCV tokamak research programme

#### **Christian Theiler**

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#### Implementation of a tightly baffled long-legged divertor in TCV

#### **Holger Reimerdes**

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IAEA-CN-316-2856



### Theory-based integrated modelling of tungsten transport: validation in present-day tokamaks and predictions for ITER

#### Daniel Fajardo

Daniel Fajardo (Max Planck Institute for Plasma Physics), Germany

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IAEA-CN-316-2857

# Study of plasma-edge turbulence reduction in negative triangularity plasmas using Thermal Helium Beam diagnostic in the TCV Tokamak

#### Margherita Ugoletti

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IAEA-CN-316-2858



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

#### Sandra Julia Torres

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IAEA-CN-316-2860



#### Active spectroscopy for atomic H and D measurements in fusion

#### Ivo Furno

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IAEA-CN-316-2864



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

#### Alexander Melnikov

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#### Recent advances at the Globus-M2 tokamak

#### Nikolai Bakharev

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IAEA-CN-316-2866



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

#### Philippe Jacquet

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IAEA-CN-316-2867

### Integrated Modelling activities in support of the ITER re-baseline

#### Mireille SCHNEIDER

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IAEA-CN-316-2868



# A MULTISCALE AND MULTIPHYSICS APPROACH TO THE DEVELOPMENT OF A HIGH-FIDELITY PHYSICS PLASMA SIMULATOR FOR BURNING PLASMA

#### Francesca POLI

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IAEA-CN-316-2869



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### A Global Licensing and Regulation Framework for Fusion Energy

#### Ralf Kaiser

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IAEA-CN-316-2870



### STEP: NOVEL POWER INFRASTRUCTURE FOR FUSION POWERPLANTS

#### **Jack Acres**

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IAEA-CN-316-2872

## RECOVERY OF ITER SECTOR MODULES FROM CRITICAL ISSUES

#### **Chang Hyun Noh**

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IAEA-CN-316-2875

2876 TH-S - Stability - VALUE!,

### IMPURITY RADIATION SEEDING OF NEOCLASSICAL TEARING MODE GROWTH

#### **Shiyong Zeng**

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IAEA-CN-316-2876

### **Evaluation of solid spherical fuel compression by comparison** with simulation

#### Ryunosuke Takizawa

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IAEA-CN-316-2877



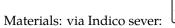
### Modeling of heat flux on the main limiter in EAST

#### binfu Gao

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IAEA-CN-316-2878



### INVESTIGATING OF MULTI-SCALE INSTABILITIES IN EAST ION TEMPERATURE CENTRAL PEAK DISCHARGE

#### Liqing Xu

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IAEA-CN-316-2879



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

#### Shota Sugiyama

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IAEA-CN-316-2880



### Virtual Tokamak for Integrated Physics and Engineering Analysis

#### Jae-Min Kwon

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IAEA-CN-316-2881



## STRUCTURE DESIGN OF POLOIDAL HORSESHOE LIMITER FOR PULSE OPERATION HEAT LOAD IN JA DEMO

#### Weixi Chen

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IAEA-CN-316-2882

### APPLICATION OF LOW-Z MATERIALS FOR ENHANCING H MODE PLASMA PERFORMANCE AND PULSE DURATION IN EAST WITH FULL METAL WALL

#### **Guizhong Zuo**

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IAEA-CN-316-2883

# Research on new high-strength structural materials for low-temperature applications in the next generation of fusion reactors

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IAEA-CN-316-2884

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

#### **Haotian Chen**

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IAEA-CN-316-2885



### HIGH GAIN FUSION BURNING IN INERTIAL CONFINEMENT FUSION PLASMA

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IAEA-CN-316-2887

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

#### **SHOUXIN WANG**

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## H-mode operation scenarios in JT-60SA initial research phase predicted by integrated core-pedestal-SOL/divertor simulation

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IAEA-CN-316-2890

# Observation of fluctuation-induced particle transport phenomena in the RT-1 levitated dipole

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IAEA-CN-316-2891

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

#### Boseong Kim, Sang-hee Hahn

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IAEA-CN-316-2892

### SIMULATIONS OF RMP CONFIGURATIONS FOR TUNGSTEN IMPURITY CONTROL IN EAST TOKAMAK

#### Zihao Gao

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IAEA-CN-316-2893



# Experimental study of EPM instability in the EAST off-axis region with elevated safety factor (q) value

#### Ming Xu

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IAEA-CN-316-2894

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

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IAEA-CN-316-2895



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

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IAEA-CN-316-2896

# ANOMALOUS X2-MODE ECRH POWER ABSORPTION AT THE TJ-II STELLARATOR: COMPARISON OF THEORY AND EXPERIMENTS

#### Alexei Popov

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IAEA-CN-316-2897



### DEVELOPMENT OF EQUILIBRIUM CONTROL SIMULATOR AND EXPERIMENTAL VALIDATION OF ADVANCED ISO-FLUX EQUILIBRIUM CONTROL DURING THE FIRST OPERATIONAL PHASE OF JT-60SA

#### Shizuo Inoue

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IAEA-CN-316-2898

# Pumping requirements for core plasma performance in STEP using JINTRAC

#### **Emmi Tholerus**

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IAEA-CN-316-2899



### Global Electromagnetic Symmetry-Breaking Effects on Momentum Transport and Current Generation in Tokamaks

#### Zhixin Lu

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IAEA-CN-316-2900

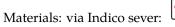
# Transport in high-performance plasmas of the TJ-II stellarator: From first-principles simulations to experimental validation

#### Jose Manuel Garcia-Regana

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 $Corresponding \ Author: Jose \ Manuel \ Garcia-Regana, Jose Manuel \ Garcia-Regana < jose. regana @ ciemat.es > 1000 \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Author: Jose \ Manuel \ Garcia-Regana < Jose \ Manuel \$ 

IAEA-CN-316-2902



### PROGRESS OF ITER AND ITS VALUE FOR FUSION

#### Pietro barabaschi

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IAEA-CN-316-2903

### WEST LONG-PULSE ACHIEVEMENTS IN SUPPORT OF NEXT-STEP FUSION DEVICES

#### Remi Dumont

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IAEA-CN-316-2904



### Defining Operational Scenarios for DTT in metallic environment: A Modeling Study of Core-Edge Dynamics and Plasma-Wall Interaction

#### Luca Balbinot

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IAEA-CN-316-2905

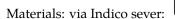
## Study on the key technologies involved in the laser neutralisation of negative ion source

#### Yuan-lai Xie, huihui hong

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### Conceptual design of the Fusion ENergY eXperiment (FENYX)

#### Vadim Yanovskiy

Vadim Yanovskiy (Institute of Plasma Physics of the Czech Academy of Sciences), Czech Republic

IAEA-CN-316-2907

# Impact of radiation distribution on detachment onset and implications for STEP divertor design

#### Michal Jan Kryjak

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IAEA-CN-316-2908

# THE EFFECT OF GAS PUFFING AT THE LH GRILL ON THE EFFICIENCY OF THE CENTRAL DENSE PLASMA ION HEATING AT THE FT-2 TOKAMAK

#### Denis Kuprienko

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IAEA-CN-316-2910



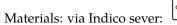
## OVERVIEW OF THE DCLL BREEDING BLANKET FOR HELIAS 5-B AND FURTHER STEPS TOWARDS A NOVEL QI DEVICE

#### **IOLE PALERMO**

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IAEA-CN-316-2911



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

#### Alexander Bock

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IAEA-CN-316-2912

## NEUTRAL BEAM INJECTION FOR ELECTRON HEATING OF GLOBUS-M2 SPHERICAL TOKAMAKâS PLASMA

#### Gleb Kurskiev

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IAEA-CN-316-2913



# THE GLOBUS-3 PROJECT AS THE NEXT STEP IN THE RESEARCH PROGRAM ON SPHERICAL TOKAMAKS AT THE IOFFE INSTITUTE

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IAEA-CN-316-2914



## OVERVIEW OF PLASMA DISRUPTION MITIGATION ON J-TEXT TOKAMAK

#### Wei Yan

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IAEA-CN-316-2915

## Predictive study of non-axisymmetric neutral beam ion loss on the upgraded KSTAR plasma-facing components

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### Control of energetic particle modes on the TCV tokamak

#### Anton Jansen van Vuuren

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IAEA-CN-316-2917

# CORE AND EDGE TRANSPORT OF SCENARIO WITH INTERNAL TRANSPORT BARRIER IN TRITIUM AND DEUTERIUM-TRITIUM PLASMAS IN JET WITH BE/W WALL

#### Costanza Maggi

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IAEA-CN-316-2918



## Turbulence, zonal flows, and global modes in burning plasmas: code development and simulations

#### Axel Könies

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IAEA-CN-316-2919

### Neutronics Analysis of EU DEMO Conducted at the Lithuanian Energy Institute

#### Simona Breidokaite

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## Piecewise omnigenous fields: a radically new family of optimized magnetic fields for stellarator reactors

#### Jose Luis Velasco Garasa

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IAEA-CN-316-2922



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

#### Pengjun Sun

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IAEA-CN-316-2923

## High performance ELM-free semi-detached scenario sustained at high-current in JET DTE3

#### Carine Giroud

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IAEA-CN-316-2924



## Overview of the recent experimental studies of plasma-facing components irradiated with divertor relevant plasma

#### Viacheslav Budaev

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IAEA-CN-316-2926

## WEST OPERATION â" RELIABILITY AND AVAILABILITY OF A LONG PULSE FUSION TOKAMAK

#### Valerie LAMAISON

Valerie LAMAISON (CEA Cadarache), France

IAEA-CN-316-2927

## STEP INBOARD SYSTEM â" ARCHITECTURE AND TECHNOLOGY DEVELOPMENT OVERVIEW

#### Simon Kirk

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IAEA-CN-316-2928

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

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### TOWARDS DIGITAL TWINS OF FUSION SYSTEMS

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IAEA-CN-316-2930



## Deuterium interaction with lowâ"activated chromium-manganese austenitic steel with increased contamination of carbide particles

#### Anna Golubeva

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IAEA-CN-316-2931



## Generation and acceleration of steady-state plasma in PLM-M device for testing of fusion materials

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## ANTICIPATING TRITIUM IMPACT AND TRANSFER IN FISSION AND FUSION POWERPLANTS

#### **Elodie Bernard**

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

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IAEA-CN-316-2936

## NEUTRONICS FOR ITER NUCLEAR PHASE: INSIGHTS AND LESSONS LEARNT FROM JET DT OPERATION

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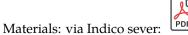
## TESTING TUNGSTEN PLASMA FACING COMPONENTS IN WEST AND AUG TOKAMAKS: LESSONS FOR ITER

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## Design and qualification activity of the first divertor of the DIVERTOR TOKAMAK TEST FACILITY

#### Selanna Roccella

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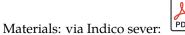


### UK STEP TOWARDS A FUSION POWER PLANT PLASMA

#### Hendrik Meyer

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### Core-edge integration studies in negative triangularity in TCV

#### Olivier Février

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IAEA-CN-316-2944



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

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### Fusion-Alpha-Enhanced Displacement and Stability of ITER Helical Core Plasmas

#### Panith Adulsiriswad

Panith Adulsiriswad (National Institute for Quantum Science and Technology), Japan

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

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IAEA-CN-316-2952

# Breakthrough in performance degradation of ITER central solenoid conductors owing to short-twist-pitch cabling and suppression of bending strain

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### Overview of CRAFT project progress

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IAEA-CN-316-2955



## OVERVIEW OF ACHIEVEMENTS AND OUTLOOK OF THE IFMIF/EVEDA PROJECT

#### Kazuo HASEGAWA

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## Nonlinear saturation of toroidal Alfv $\tilde{A}$ ©n eigenmode via ion induced scattering in nonuniform plasmas

#### Zhiyong Qiu

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IAEA-CN-316-2957

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

#### Kimin Kim

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## Compatibility of pronounced detachment with improved confinement on HL-2A tokamak

#### Ting Wu

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IAEA-CN-316-2960

### DEVELOPMENT OF HIGH-PERFORMANCE LONG-PULSE DISCHARGE IN KSTAR

#### **HYUNSEOK KIM**

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

#### Hogun Jhang, Minjun Choi

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IAEA-CN-316-2962

#### EXPERIMENTAL STUDY ON TRITIUM RELEASE FROM LI2TIO3 PEBBLES AS TRITIUM BREEDER THROUGH INTERNATIONAL COLLABORATION BETWEEN KOREA AND CHINA

#### Yi-Hyun PARK

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IAEA-CN-316-2963



## APPLICATION AND ANALYSIS OF THE REVISED ACCURATE WEIGHT METHOD FOR FUSION FACILITIES

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# DEVELOPMENT OF HIGH POLOIDAL BETA SCENARIO FOR LONG-PULSE OPERATION IN COLLABORATION BETWEEN DIII-D AND KSTAR

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### DESIGN-BASED MULTIDINENSIONAL TRITIUM TRANSPORT ANALYSIS PLATFORM FOR BLANKET SYSTEM

#### Yonghee Lee

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### OVERVIEW OF ERROR FIELD SCALING STUDIES IN EAST AND IMPLICATIONS FOR ITER

#### Hui-Hui WANG

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

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# Self-organized states of Alfvén eigenmodes and zonal modes via cross-scale interactions

#### Qinghao Yan

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IAEA-CN-316-2969



# DEVELOPMENT STATUS OF IN-VESSEL COMPONENTS INSPECTION AND PIPE MAINTENANCE ROBOT FOR K-DEMO AND FUSION EXPERIMENTAL DEVICE

#### Dohee Lee, Woong Chae Kim

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## Thermal quench dynamics and heat flux distribution during massive-impurity-injection triggered disruption in EAST

#### Long Zeng

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IAEA-CN-316-2971



## Energy exchange between electrons and ions induced by ITG-TEM turbulence

#### Tetsuji Kato

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IAEA-CN-316-2972

# ANALYSIS OF BACKGROUND PLASMA BEHAVIOR UNDER EXTERNAL FIELDS IN THE LOW ENERGY BEAM TRANSPORT SECTION OF LIPAC

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### GYROKINETIC ANALYSIS FOR ELECTRON-SCALE TURBULENCE IN KSTAR FIRE MODE DISCHARGE

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### ELM SUPPRESSION BY ECCD-CONTROLLED BENIGN MHD MODES IN THE KSTAR TOKAMAK

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### LEVERAGING TURBULENCE DATA FROM FUSION EXPERIMENTS

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## DYNAMICS OF INTERNAL RECONNECTION EVENTS IN VERSATILE EXPERIMENT SPHERICAL TORUS

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# SIMULATION OF STOCHASTIC TRANSPORT AND DEPOSITION OF SEED RUNAWAY ELECTRONS DURING ITER SPI

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# CONJUGATE HEAT TRANSFER LARGE EDDY SIMULATION OF A HYPERVAPOTRON: FROM INCIPIENT NUCLEATE BOILING TO CRITICAL HEAT FLUX

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## LOWER DENSITY LIMIT FOR ACCESSING TO ELM SUPPRESSION USING N=4 RMP IN EAST

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IAEA-CN-316-2981

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

#### Jianglong Wei, Lizhen Liang

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#### Study of erosion of ceramic materials under transient thermal load

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IAEA-CN-316-2983



# THEORY OF FAST ION POPULATION EFFECT ON TURBULENCE SELF-REGULATION IN MAGNETIZED FUSION PLASMAS

#### Gyungjin CHOI

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## DESIGN AND DEVELOPMENT OF ITER VUV SPECTROMETERS WITH PROTOTYPE TESTING

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#### GROWING NONLINEARITY IN KSTAR FIRE MODE PEDESTAL PROVIDES CLUE TO UNDESIRABLE H-MODE TRANSITION IN I-MODE PLASMAS

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## DENSITY DEPENDENCE OF CONVECTION IN PARALLEL HEAT TRANSPORT IN THE SCRAPE-OFF LAYER OF JT-60U

#### Ryota Matoike

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# MODELLING OF MILDLY RELATIVISTIC RUNAWAY ELECTRONS â"DEVELOPMENT OF REDUCED-KINETIC MODEL AND VALIDATION IN KSTAR OHMIC STARTUP

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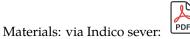


# Overview of the physics design of the EHL-2 spherical torus for proton-Boron fusion

#### Hua-sheng Xie

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

#### Sarfraz Ahmad

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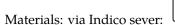


## PROGRESS IN FUSION WORKFORCE DEVELOPMENT AND EDUCATION IN EUROPE, USA, JAPAN AND ITER

#### **Eva Belonohy**

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## Accomplishment of high duty cycle beam commissioning of Linear IFMIF Prototype Accelerator (LIPAc) at 5 MeV, 125 mA D+

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IAEA-CN-316-2992

## Characteristics of tungsten impurity sources and transport in KSTAR

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# A SIMULATION STUDY OF PLASMA BREAKDOWN IN THE TOKAMAK ELECTRON CYCLOTRON PRE-IONIZATION PHASE

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### EFFECT OF ELECTRON CYCLOTRON WAVES ON PLASMA WITH RUNAWAY ELECTRONS

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# Nonlinear spectrum evolution of lower hybrid waves and density limit of lower hybrid current drive

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# EFFECTS OF FINITE ION TEMPERATURE AND ITS GRADIENT ON HASEGAWA-MIMA EQUATION AND ZONAL FLOW GENERATION

#### Lu Wang

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### Overview of EXL-50U Experiments: Addressing Key Physics Issues for Future Spherical Torus Reactors

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#### A Possible Method to Implement Passive 3d Coils for Runaway Electron Suppression in Future Reactor-Scale Tokamaks

#### Bo Rao

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### OVERVIEW OF THE KSTAR EXPERIMENTS AND FUTURE PLAN

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#### Neural network reduced models for plasma turbulence

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### Investigation of double frequency fishbone in EAST with neutral beam injection

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### A MATERIAL DATABASE OF SS316L(N)-IG FOR ITER BLANKET SHIELD BLOCKS

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#### Simulation of Pulse Quench Propagation in Superconducting Magnets for the Next Generation Compact Fusion Energy Experimental Device

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### RESEARCH AT THE KURCHATOV INSTITUTE IN SUPPORT OF THE CREATION OF A HYBRID FUSION-FISSION SYSTEM

#### Yury Shpanskiy

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IAEA-CN-316-3011

#### **Progress of the EHL-2 Spherical Torus Engineering Design**

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## DATA EFFICIENCY AND LONG-TERM PREDICTION CAPABILITIES FOR NEU- RAL OPERATOR SURROGATE MODELS OF EDGE PLASMA CODES

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### Experimental investigation of deuterium and nitrogen-seeded H-mode plasmas in KSTAR with new W divertor

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IAEA-CN-316-3014



## TRT PLASMA CONTROL COMPLEXES CONCEPTUAL DESIGN ON THE BASE OF THE ITER FUSION TECHNOLOGY DEVELOPMENT

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IAEA-CN-316-3015



### Towards Practical Fusion Energy: Engineering Challenges and Development Strategies by the Perspective of CNPE

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## FUSION MAGNET POWER EQUIPMENT INSTALLATION DESIGN BASED ON MULTI-PHYSICS FIELD COUPLING AND MODULAR OPTIMIZATION

#### Hong Lei

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### ASSESSMENT OF B4C AS FIRST WALL COATING FOR THERMONUCLEAR REACTOR

#### **Anton Putrik**

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IAEA-CN-316-3018



## FEATURES OF FUSION POWER MEASUREMENTS IN THE NEXT GENERATION MAGNETIC PLASMA CONFINEMENT EXPERIMENTS

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IAEA-CN-316-3019



## ACHIEVEMENT AT THE ITER NEUTRAL BEAM TEST FACILITY AND PROSPECTS FOR THE R&D ACTIVITIES WITHIN THE ITER RESEARCH PLAN

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IAEA-CN-316-3020



#### RADIOLOGICAL SAFETY ASSESSMENTS FOR FUSION NEUTRON SOURCE IN ENGINEERING DESIGN ACTIVITIES UNDER IFMIF/EVEDA PROJECT

#### Shunsuke Kenjo

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IAEA-CN-316-3021



## ACTIVELY COOLED PLASMA FACING COMPONENTS DESIGN FOR W7-X AND JT-60SA IN SUPPORT OF THE ITER DIVERTOR

#### Marianne Richou

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IAEA-CN-316-3023



### FIRST QUANTIFICATION OF VOLUME RECOMBINATION IN W7-X WITH EMC3-EIRENE

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### Investigation of high Q L-mode plasma operation sustained by enhanced pellet fueling in ITER

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IAEA-CN-316-3025



### INVESTIGATION OF IMPURITY BEHAVIOUR IN THREE-ION ICRF SCENARIOS IN H-D AND D-T PLASMAS AT JET

#### Agata Chomiczewska

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

#### Irena Ivanova-Stanik

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IAEA-CN-316-3027

### THEORY AND SIMULATION OF PHASE SPACE TRANSPORT IN BURNING PLASMAS

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IAEA-CN-316-3028

### DEVELOPING MACHINE LEARNING FACILITATED PEDESTAL MODELS

#### Aaro Järvinen

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IAEA-CN-316-3029



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

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IAEA-CN-316-3030



#### Coupling of Geodesic Acoustic Modes and Resonant Magnetic Perturbations in Fusion Plasmas

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IAEA-CN-316-3031



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

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IAEA-CN-316-3032

### New insights on the quasicoherent mode in EDA high confinement discharges

#### **Gustavo Grenfell**

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IAEA-CN-316-3033



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

#### Lidia piron

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IAEA-CN-316-3035

### PLASMA CONTROL EXPERIMENTS IN JET DEUTERIUM-TRITIUM PLASMAS

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IAEA-CN-316-3038

# 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

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IAEA-CN-316-3041

## Improvements of Magnet Power Supply System and Achievements in Coil Energization Tests for First Plasma of JT-60SA

#### Kunihito Yamauchi

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IAEA-CN-316-3043



### IMPACT OF TRANSIENT HEAT LOADS ON THE DETACHED MAST UPGRADE SUPER-X DIVERTOR

#### **Rory Scannell**

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IAEA-CN-316-3044

### 3D hybrid fluid-kinetic simulations of large scale plasma instabilities in runaway electron beams

#### Shi-Jie Liu

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IAEA-CN-316-3045



## SURROGATE MODEL FOR TURBULENT TRANSPORT USING DEEP LEARNING AND PLASMA PROFILE PREDICTION IN TOKAMAK PLASMAS

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IAEA-CN-316-3046

# Non-Inductive Current Start-up and Optimized Ramp-up in EXL-50U for Next-Generation Spherical Torus Devices

## xinchen Jiang

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IAEA-CN-316-3047



# EXHAUST OPERATIONAL SPACE ASSESSMENT FOR THE EUROPEAN VOLUMETRIC NEUTRON SOURCE (EU-VNS)

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IAEA-CN-316-3048

# WEST advanced wall protection achievements toward long pulse operation

## Raphael MITTEAU

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IAEA-CN-316-3049

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

## **Dmitry Moseev**

Dmitry Moseev (Max-Planck-Institut f $\tilde{A}^{1}$ /4r Plasmaphysik), Germany

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IAEA-CN-316-3050

# Drift-kinetic and fully kinetic simulations of plasma waves based on a geometric Particle-In-Cell discretization of the Vlasov-Maxwell system

## **Guo Meng**

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IAEA-CN-316-3051

# Overview of ASDEX Upgrade results

## Thomas Pütterich

Thomas  $P\tilde{A}^{1/4}$ tterich (Max-Planck-Institut  $f\tilde{A}^{1/4}$ r Plasmaphysik), Germany

IAEA-CN-316-3052

# Fusion research and development strategy for JA DEMO investigated in QST

## Hidenobu Takenaga

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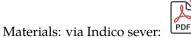
IAEA-CN-316-3053

# FEASIBILITY STUDY OF TUNGSTEN-WATER/AIR REACTION IN DEMO CONDITIONS

## Damiano Capobianco

Damiano Capobianco (RINA CSM), Italy

IAEA-CN-316-3054



# STEP: Driving a pathway to accelerated fusion delivery

### **Howard Wilson**

Howard Wilson (UK Industrial Fusion Solutions), United Kingdom

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IAEA-CN-316-3055



# FUSION ALPHA-PARTICLE-DRIVEN ALFVEN EIGENMODES IN JET DT PLASMAS: EXPERIMENTS AND THEORY

## Sergei Sharapov

Sergei Sharapov (UKAEA), United Kingdom

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IAEA-CN-316-3056

# **VERIFICATION AND OPTIMIZATION OF VDES BY** COUPLING THE FREE-BOUNDARY EQUILIBRIUM AND TRANSPORT CODES WITH CONTROL IN THE HL-3 **TOKAMAK**

### Xiao Song

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IAEA-CN-316-3058



# BB Segment Grasping Pipeline with Variable Admittance Control for EU DEMO Remote Maintenance

## Hjalte Durocher, Xingyu Yang

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IAEA-CN-316-3059

# Experimental observations of magnetohydrodynamic instabilities in HL-3 low-current high- $\hat{I}^2N$ plasmas

## Liming Yu

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IAEA-CN-316-3060



# OBSERVATION OF HIGH-FREQUENCY OSCILLATIONS IN THE TUMAN-3M OHMIC PLASMAS

## Sergei Lebedev

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IAEA-CN-316-3061

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

## Yi Zhang

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IAEA-CN-316-3063



# OVERVIEW OF UKAEAâS INTEGRATED FUSION TECHNOLOGY PROGRAMMES, EMPHASISING A DIGITAL FIRST STRATEGY

### **Rachel Lawless**

Rachel Lawless (UKAEA), United Kingdom

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IAEA-CN-316-3065

# Foams as a Pathway to Energy from Inertial Fusion (FoPIFE): overview of recent results

## sebastien Le Pape

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IAEA-CN-316-3066



# The X-Point Radiator regime in the WEST tokamak for divertor operation in next step fusion devices

### Nicolas RIVALS

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IAEA-CN-316-3067



# Application of a Design Structure Matrix Methodology to STEP Plasma Control System Design and Sensor Optimisation

## **Eddie Pennington**

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IAEA-CN-316-3068



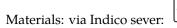
# Overview of the DONES Experimental Programme

# Angel Ibarra

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IAEA-CN-316-3069



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

#### Lionello Marrelli

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IAEA-CN-316-3070

# WEST wall conditioning with boron: lessons for ITER and fusion power plants

### Eleonore Geulin

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IAEA-CN-316-3072



# n=0 VERTICAL DISPLACEMENTS, IMPACT OF MAGNETIC X-POINTS, AND VERTICAL DISPLACEMENT OSCILLATORY MODES DRIVEN BY FAST IONS IN TOKAMAK PLASMAS

## Francesco Porcelli

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IAEA-CN-316-3073



# A TALE OF TWO (VISCO)CITIES Electromagnetic Turbulence and Transport Bifurcations: Implications for Next-Generation Fusion Power Plants

## **Daniel Kennedy**

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IAEA-CN-316-3074

# RUNAWAY ELECTRONS IN JET â" SUMMARY ON RE DATA AFTER THE END OF JET OPERATIONS

## Vladislav Plyusnin

Vladislav Plyusnin (Instituto de Plasmas e Fusão Nuclear, Associação EURATOM-IST, Instituto Superior Tecnico), Portugal

IAEA-CN-316-3075



# Alpha particle velocity space and orbit sensitivity of gamma-ray spectroscopy diagnostics based on the 10B(\alpha,p\gamma)13C reaction

### Massimo Nocente

Massimo Nocente (Dipartimento di Fisica, Universit $\tilde{A}$  di Milano-Bicocca), Italy

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IAEA-CN-316-3076



# EXPERIMENTAL RESEARCH ON MAGNETOHYDRODYNAMIC (MHD) FLOWS IN LIQUID METAL COOLING SYSTEMS FOR FUSION REACTORS

## Ivan Belyaev

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IAEA-CN-316-3084



# Attaining Tokamak level performance through plasma density profile shaping at Wendelstein 7-X

#### Sebastian Bannmann

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IAEA-CN-316-3085

# The physics basis for implementing Alternative Divertor Configurations on reactors

## Kevin Verhaegh

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IAEA-CN-316-3088



# Tokamak formation via localized helicity injection using tangential boundary flows

### Pablo Garcia-Martinez

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IAEA-CN-316-3091

# FIRST EDGE-LOCALIZED MODE SUPPRESSION WITH LOWER HYBRID WAVES ON THE EAST TOKAMAK

## **Shaocheng Liu**

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IAEA-CN-316-3095



# NONLOCAL BEHAVIOR OF TURBULENCE IN THE PRESENCE OF POLOIDALLY LOCALIZED HEAT SOURCE

## Youngwoo Cho

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IAEA-CN-316-3096

# ICRF ANTENNA DESIGN FOR THE HL-3 TOKAMAK

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IAEA-CN-316-3098



# Design studies on advanced self-cooled liquid test blanket modules for JA-DEMO

## Teruya Tanaka

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IAEA-CN-316-3100

# Progress of Research on the KTX Reversed Field Pinch

### Ge ZHUANG

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IAEA-CN-316-3101



# Overview of R&D activities within IFERC in support of fusion development in the context of the Broader Approach Agreement Phase II

## Masatoshi Yagi

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IAEA-CN-316-3102

### NEW UNDERSTANDING OF RESONANT LAYER RESPONSE VIA EXTENDED DRIFT MHD

#### Jong Kyu Park

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IAEA-CN-316-3103



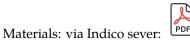
### REGULATORY FRAMEWORK TOWARDS FUSION ENERGY IN GERMANY

#### Jens-Uwe Schmollack

Jens-Uwe Schmollack (TUV Rheinland), Germany

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IAEA-CN-316-3104



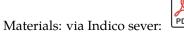
# A mechanism to trigger edge localized mode crash due to a threshold of magnetic perturbation driven by peeling-ballooning mode

#### Wenjin Chen

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IAEA-CN-316-3105



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

#### Shinichiro Kado

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IAEA-CN-316-3107

### NONLINEAR MAGNETOHYDRODYNAMIC MODELLING OF IDEAL BALLOONING MODES IN HIGH-BETA WENDELSTEIN 7-X PLASMAS

#### Yao Zhou

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IAEA-CN-316-3108



## EFFECTS OF ZONAL FIELDS ON ENERGETIC-PARTICLE EXCITATIONS OF REVERSED-SHEAR ALFVÃN EIGENMODES

#### Ruirui MA

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IAEA-CN-316-3109

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

#### Shiqin Wang

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IAEA-CN-316-3110

### Progress of Proton-Boron Research for Fusion Energy in China

#### Bing Liu

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IAEA-CN-316-3111



### A COMPREHENSIVE DESIGN OF THE UPPER PORT #18 INTERSPACE SUPPORT STRUCTURE FOR THE ITER DIAGNOSTIC PORT

#### Jaemin Kim

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IAEA-CN-316-3112



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

#### Min Jiang

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IAEA-CN-316-3114

## OPERATIONAL SPACE OF SMALL ELM AND ELM-FREE REGIMES ON HL-3 TOKAMAK

#### Na Wu

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IAEA-CN-316-3115



### LONG-PULSE ELM-FREE H-MODE REGIME WITH FEEDBACK-CONTROLLED DETACHMENT UNDER BORONIZED METAL WALL IN EAST

#### Guosheng Xu

Guosheng Xu (Institute of Plasma Physics, Chinese Academy of Sciences), China

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IAEA-CN-316-3116

## Advancing Tritium Fueling for DT Fusion in HL-3: Innovations in SMBI Techniques and Physics-Based Tritium Fueling Strategies

#### **Guoliang Xiao**

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IAEA-CN-316-3117

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# Pressure gradient driven core-localized electromagnetic instability in the plasma with a weak magnetic shear on HL-2A tokamak

#### peiwan shi

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IAEA-CN-316-3119

# PROGRESS OF CORE-EDGE INTEGRATED TUNGSTEN TRANSPORT STUDY IN EAST WITH ITER-LIKE TUNGSTEN DIVERTORS USING ADVANCED IMPURITY DIAGNOSTICS

#### Ling ZHANG

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IAEA-CN-316-3123



# GLOBAL DISPERSION AND NONLINEAR DYNAMICS IN PLASMAS MODELED FOR JT-60U STRONGLY REVERSED MAGNETIC SHEAR CONFIGURATION EXHIBITING A SIGNATURE OF ITBS FROM L-MODE CHARACTERISTICS

#### Rui Zhao

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IAEA-CN-316-3124

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

#### Liang Liu

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IAEA-CN-316-3125

# Progress in the concept development of the VNS - a beam-driven tokamak for component testing

#### **CHRISTIAN Bachmann**

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IAEA-CN-316-3126



### Recent Progress of Dissimilar Material Bonding Technique with Spark Plasma Sintering Method for High Heat Load Plasma Facing Components in Reactor-relevant Devices

#### Tomohiro Morisaki

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IAEA-CN-316-3127



## Towards a Stellarator Fusion Reactor: Achievements of the European Stellarator Program

#### Felix Warmer

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IAEA-CN-316-3128

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

#### Weixin Guo

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IAEA-CN-316-3130



### THREE-DIMENSIONAL NONLINEAR MODELING OF ELM DYNAMICS WITH BIASING IN THE HL-3 TOKAMAK

#### Jie HUANG

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IAEA-CN-316-3131

### Simulations of the interactions between ELMs and edge turbulences on fusion reactor scale facilities

#### Tianyang XIa

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IAEA-CN-316-3134



# PROGRESS IN FIRST-PRINCIPLES BOUNDARY SIMULATIONS OF PLASMA TURBULENCE AND NEUTRAL DYNAMICS WITH THE GBS CODE

#### Paolo Ricci

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IAEA-CN-316-3135

# Engineering Design, Construction, and Flexible Control of Magnetic Field Configuration of Quasi-axisymmetric Stellarator CFQS-T

#### Mitsutaka Isobe

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IAEA-CN-316-3136



### ION AND ELECTRON HEATING VIA MAGNETIC RECONNECTION DURING MERGING/COMPRESSION PLASMA STARTUP IN ST40

#### Hiroshi Tanabe

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IAEA-CN-316-3137



### CHARACTERISTICS OF HIGH FREQUENCY TURBULENCE DURING EDGE LOCALIZED MODES IN THE HL-2A TOKAMAK

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IAEA-CN-316-3138



## FAST ION TRANSPORT INDUCED BY EDGE LOCALIZED MODES

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IAEA-CN-316-3139

# DISRUPTION PREDICTION FOR FUTURE TOKAMAK REACTORS FROM DIFFERENT PERSPECTIVES AND WITH DIFFERENT METHODS

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IAEA-CN-316-3140



## Impact of the Plasma Boundary on Machine Operation, and the Risk Mitigation Strategy on JET

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IAEA-CN-316-3141

### T-15MD: MISSION AND RECENT EXPERIMENTAL RESULTS

#### Natalia Kirneva

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IAEA-CN-316-3142



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

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Chenxu Wang, Japan

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IAEA-CN-316-3143



### THE 2024 NEW BASELINE ITER RESEARCH PLAN

#### Siwoo Yoon

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IAEA-CN-316-3144



### ENDOSCOPE LASER-INDUCED BREAKDOWN SPECTROSCOPY (LIBS) FOR IN SITU ELEMENTAL DISTRIBUTION DIAGNOSIS ON THE SURFACE OF DIVERTOR IN EAST

#### Cong Li

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IAEA-CN-316-3145

## DEVELOPMENT OF METER-SCALE LARGE W/CU DIVERTOR COMPONENTS FOR FUSION REACTOR AT ASIPP

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IAEA-CN-316-3146



# PROGRESS OF LOWER HYBRID CURRENT DRIVE EXPERIMENT TOWARDS LONG-PULSE OPERATION ON EAST

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IAEA-CN-316-3147

# ESTABLISHING AFRICAN FUSION ENERGY RESEARCH CONSORTIUM: CAPACITY BUILDING AND INNOVATION PATHWAY

#### **Umar F Ahmad**

Umar F Ahmad, Nigeria

IAEA-CN-316-3149



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

#### Miao Zhao

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IAEA-CN-316-3150

# EXTRACTING THE NEAREST CANONICAL EQUILIBRIUM DISTRIBUTION VIA NATURAL GRADIENT DESCENT METHOD

#### Chao Li

Chao Li (Peking University), China

IAEA-CN-316-3151



### Recent Experiments and Development of LHCD system on HL-3

#### Xingyu Bai

Xingyu Bai (CnSWIP), China

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### A Physics-Informed Neural Network for Real-Time, Data-Efficient Plasma Equilibrium Reconstruction in SUNIST-2

#### Yuhang Luo

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IAEA-CN-316-3153



### OVERVIEW OF RECENT RESULTS IN RESEARCH TACKING REMOTE MAINTENANCE CHALLENGES OF FUTURE FUSION ENERGY DEVICES

#### **Robert Skilton**

Robert Skilton (UK Atomic Energy Authority), United Kingdom

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IAEA-CN-316-3154

### Preliminary design and development of neutron activation system on CN HCCB TBS

#### Qijie Wang

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IAEA-CN-316-3156



### A New Eigenvalue Solver for Electrostatic Drift-Wave Instabilities in Tokamaks

#### Jie Wang

Jie Wang (University of Science and Technology of China), China

IAEA-CN-316-3158

### MITIGATION OF ELM BY 3D MAGNETIC PERTURBATIONS IN HL-3/HL-2A TOKAMAKS

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IAEA-CN-316-3160



# Investigation of transient transport dynamics induced by compact torus injection in the EAST tokamak

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IAEA-CN-316-3161

### VALIDATION OF PLASMA -WALL SELF-ORGANIZATION THEORY BY HIGH DENSITY LIMITS ACHIEVED ON EAST

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IAEA-CN-316-3162



# LOW-THRESHOLD ABSOLUTE PARAMETRIC DECAY INSTABILITY IN X2-MODE ECRH EXPERIMENTS AND THE MISSING POWER EFFECT

#### Evgenii Gusakov

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IAEA-CN-316-3163



# EXPERIMENTAL STUDY OF THE 2/1 MODE RMP ON THE RUNAWAY CURRENT SUPPRESSION DURING DISRUPTIONS ON J-TEXT

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IAEA-CN-316-3166

### DECODING THE CAUSES OF HIGH-DENSITY DISRUPTION THROUGH INTERPRETABLE MACHINE LEARNING

#### Chengshuo Shen

Chengshuo Shen (Huazhong University of Science and Technology), China

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IAEA-CN-316-3167

### Conceptual Design Study for Downsizing of Fusion DEMO Reactor

#### Hiroyasu Utoh

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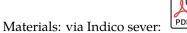
IAEA-CN-316-3169



### SAWTEETH DYNAMICS IN JT-60SA BASELINE SCENARIOS WITH EFFECTS ON NTM ONSET

#### Silvana NOWAK

Silvana NOWAK (ISTP-CNR, Milano, Italy), Italy



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

#### Shoichi Hatakeyama

Shoichi Hatakeyama (National Institutes for Quantum Science and Technology), Japan

IAEA-CN-316-3177



3178 TH-S - Stability - VALUE!,

### AUGMENTING THE EXTRAPOLATION CAPABILITY OF DISRUPTION PREDICTION TO EXTENDED PARAMETER REGIMES BY PREDICT-FIRST NEURAL NETWORK

#### Zongyu Yang

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IAEA-CN-316-3178

## Design and Optimization of Advanced Divertor Configurations for Heat Flux Management in the EHL-2 Spherical Torus Project

#### Xiang gU

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### Drift flows impact island divertor operation in Wendelstein 7-X

#### Carsten Killer

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IAEA-CN-316-3182



### OVERVIEW OF WEST CONTRIBUTIONS TO THE NEW ITER BASELINE AND FUSION POWER PLANTS

#### Jerome Bucalossi

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IAEA-CN-316-3183



## Radiation shielding analysis of IFMIF-DONES Test Cell and adjacent rooms

#### Arkady Serikov

Arkady Serikov (Karlsruhe Institute of Technology (KIT)), Germany

IAEA-CN-316-3190

### Kinetic modeling of tungsten transport induced by low-n X-point mode

#### Huayi Chang

Huayi Chang (Dalian University of Technology), China

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IAEA-CN-316-3192

### SIMULATION OF DEUTERIUM-TRITIUM ISOTOPE EFFECTS ON THE DIVERTOR TARGET HEAT FLUX DENSITY IN CFEDR

#### Chen Zhang

Chen Zhang (大è ¿ç工大å¦), China

IAEA-CN-316-3193

### R&D on W First Wall for ITER and Future Fusion Reactors

### Jiming Chen

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IAEA-CN-316-3194



# SIMULATING ENERGETIC PARTICLE DYNAMICS USING OPERATOR NEURAL NETWORKS WITH SPATIAL TRANSLATION INVARIANCE

#### Jian LIU

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

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IAEA-CN-316-3197



# Realization of direct internal recycling for DEMO fuel cycle based on a novel cryopump configuration

#### Zhaoxi Chen

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# Experimental studies on the effect of turbulence-driven edge poloidal shear flow on tokamak plasma confinement

#### **Ting Long**

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IAEA-CN-316-3199



## Structural Design of the Negative Triangularity Spherical Tokamak (NTST)

#### Xuesong Ma

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### PROGRESS ON THE ENGINEERING QUALIFICATION OF CN-RAFM STEEL

#### **Guoping YANG**

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IAEA-CN-316-3201

## Fast ion transport in presence of magnetic perturbations using full-orbit and guiding-center simulations

#### Julio Martinell

# THE DEVELOPMENT OF 3D MHD CODE IN COMSOL MULTIPHYSICS AND ITS APPLICATION FOR MHD FLOW IN RIPPLED MAGNETIC FIELD

#### Jun Wang

Jun Wang (Southwestern Institute of Physics), China

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### Helium Cooled Ceramic Breeder Testing Blanket System Heat Release and Tritium Release for the ITER New Baseline DT-1 Scenario in the Port Cell

#### RuYan Li

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## Magnetic flux surface mapping system at Chinese First Quasi-axisymmetric Stellarator

#### Xirui Liu

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IAEA-CN-316-3205



## Linear andâquasi-linearâtoroidal modeling of resonant magnetic perturbations during ELMs mitigation in HL-3

#### Neng Zhang

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IAEA-CN-316-3206

# NATURAL SMALL ELMS ACHIEVED AT LOW PEDESTAL COLLISIONALITY (<1) IN A METAL WALL ENVIRONMENT ON EAST

### Y.F. Wang

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IAEA-CN-316-3207



# INFERNAL-KINK INSTABILITY IN NEGATIVE-TRIANGULARITY PLASAMAS WITH NEGATIVE CENTRAL SHEAR

### LI LI

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IAEA-CN-316-3208

## PROGRESS ON REAL-TIME DENSITY CONTROL CAPABILITY OF THE KSTAR TOKAMAK

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IAEA-CN-316-3209



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

### Menghua Yang

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### DYNAMICS OF TURBULENCE AND ZONAL FLOWS EFFECTED BY TUNGSTEN IMPUITTY IN HL-2A EDGE PLASMAS

### Qian Zou

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IAEA-CN-316-3211

# Achieving Full-Coverage Liquid GaInSn Film Flow under Magnetic Fields: Synergistic Effects of Wettability Optimization and Dual-Layer Structural Design

### Yiming Wang

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IAEA-CN-316-3212

## IN-SITU CALIBRATION OF NEUTRON FLUX MONITOR FOR HL-3 TOKAMAK

### **Guoliang Yuan**

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IAEA-CN-316-3213

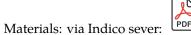


## Self-Organized FRC Formation in Mirror Field Orthogonal to the Axis of Counter-Injected Plasmoids

#### Tsutomu Takahashi

Tsutomu Takahashi (Nihon University), Japan

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### DEVELOPMENT OF STEADY-SATE OPERATION SCENARIOS WITH FULL TUNGSTEN LIMITER/DIVERTOR IN ITER-RELEVANT CONFIGURATION ON EAST

### Juan Huang

Juan Huang (CnIPPCAS), China

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### TUNGSTEN DUST TRANSPORT IN THE STOR-M TOKAMAK

### Chijin Xiao

Chijin Xiao (University of Saskatchewan), Canada

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IAEA-CN-316-3218

# High Intensity Neutron Source for Fusion Nuclear Technology Development

### Qi YANG

Qi YANG (International Academy of Neutron Science), China

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IAEA-CN-316-3219



## Transport properties of trapped-electron-mode turbulence interacting with tearing modes in tokamak plasmas

### Jiquan Li

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IAEA-CN-316-3221

# Design and Testing of Quench Protection System for ITER Magnet Cold Test Bench

### Wei Tong

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IAEA-CN-316-3224



### Stellarator Plasma Start-up Model Based on Energy Confinement Time Scaling Laws, Experimental Verification and Numerical Simulation Results

### chun yan Li

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IAEA-CN-316-3225



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

### Pan Li

Pan Li (Institute of Plasma Physics, Chinese Academy of Science), China

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## NOVEL EFFECTS OF EDGE-LOCALISED RMPS AND PLASMA DENSITY ON THE L-H TRANSITIONS AND TURBULENCE

### Eun-jin Kim

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IAEA-CN-316-3227

## SIMULATION OF HEAT EXCHANGER TUBE RUPTURE ACCIDENT FOR CN HCCB TBS

### Bo HU

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IAEA-CN-316-3231



# The 4C code as a candidate tool for the qualified analysis of superconducting magnets in the licensing of nuclear fusion reactors

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IAEA-CN-316-3232

### DIVERTOR FLUX CONTROL BY RMP ELM SUPPRESSION AND RADIATIVE DIVERTOR OPERATION IN EAST H-MODE WITH TUNGSTEN PLASMA FACING COMPONENTS IN SUPPORT OF ITER NEW RESEARCH PLAN

### Manni JIA

Manni JIA (Institute of Plasma Physics, Chinese Academy of Sciences), China

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# Development and validation of magneto-hydrodynamic turbulence models for the thermal-hydraulic design of ARC-class fusion reactor liquid blankets

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IAEA-CN-316-3236

## DESIGN AND CHALLENGE FOR ITER DIVERTOR LANGMUIR PROBE

### Lin Nie

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IAEA-CN-316-3239

## Next-Generation Coil Power Supply System for the Tokamak: Design, Implementation, and Operational Performance

### LIANSHENG HUANG

LIANSHENG HUANG (Institute of Plasma Physics, CAS), China

IAEA-CN-316-3240

# Validated, global edge-SOL turbulence simulations in various ELM-free regimes

### Wladimir Zholobenko

Wladimir Zholobenko (Max Planck Institute for Plasma Physics), Germany

IAEA-CN-316-3241



### COMMISSIONING OF THE CHINESE LARGEST SUPERCONDUCTING HIGH-FLUX LINEAR PLASMA DEVICE SWORD

### Haishan Zhou

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IAEA-CN-316-3248

### Construction Progress of Chinese First Quasi-axisymmetric Stellarator (CFQS) and Preliminary Results in the CFQS-Test Device

### Yuhong Xu

Yuhong Xu (Southwest Jiaotong University), China

Corresponding Author: Yuhong Xu, Yuhong Xu < xuyuhong@swjtu.edu.cn >



# Kinetic modeling of interactions among drift-Alfven instability, continuous spectrum and energetic particle in fusion experiments

### Jian Bao

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IAEA-CN-316-3252

## Reinforcement Learning-Based Plasma Shape Control via Isoflux scheme on superconductor tokamak

### Haoyu Wang

Haoyu Wang (Institute of plasma physics, Chinese Academy of Sciences), China

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IAEA-CN-316-3254

## A novel Multi-Timescale strategy for Fusion Systems Codes and its impact to parametric analyses of Fusion Power Plants

### Tiago Pomella Lobo

Tiago Pomella Lobo (Karlsruhe Institute of Technology (KIT)), Germany

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IAEA-CN-316-3256

## Overview of Wendelstein 7-X high-performance operation

### Olaf Grulke

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IAEA-CN-316-3257

## HL-3 RESEARCH TOWARDS HIGH-PERFORMANCE PLASMA AND POWER EXHAUST SOLUTION

### Wulyu Zhong

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IAEA-CN-316-3258

## The role of ambient turbulence in facilitating thermal quench of disruptive plasmas in HL-2A tokamak

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IAEA-CN-316-3259



## SIMULATION OF EFFECT OF POLOIDAL INJECTION GEOMETRY ON LI-PELLET TRIGGERED ELM UNDER BOUT++ FRAMEWORK

### Mao Li

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## Theoretical Model for the Experimentally Observed GAMâs Satellites

### Ekaterina Sorokina

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IAEA-CN-316-3263

# AVERAGE MAGNETIC DRIFT MODEL FOR ION TEMPERATURE GRADIENT DRIVEN INSTABILITY IN TOKAMAKS

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IAEA-CN-316-3264

## EFFECT OF IMPURITY DISTRIBUTION ON THE STABILITY OF NEOCLASSICAL TEARING MODE

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IAEA-CN-316-3267



## Nonlinear Self-Consistent Dynamics of Geodesic Acoustic Modes and Zonal Flows in Toroidally Rotating Tokamak Plasmas

### Victor Ilgisonis

Victor Ilgisonis (NRC Kurchatov Inst), Russia

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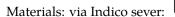


### Alpha particle generation and confinement in D-3He scenarios in JT-60SA

#### Rui Miguel Dias Alves Coelho

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# CHARACTERISTICS OF EDGE QUASI-COHERENT MODE IN THE EDA H-MODE ON HL-3

#### **Anshu Liang**

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IAEA-CN-316-3271

### Plasma Instability Events Detection and Disruption Prediction in EAST Tokamak via Heterogeneous-Feature Multi-Task Learning

#### Yunhu Jia

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IAEA-CN-316-3276



# Evaluating economic, environmental, and social impacts of adopting fusion energy in Saudi Arabia

#### Ibrahim Alrammah

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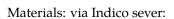


#### Remote Handling Strategy of Volumetric Neutron Source Blanket

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# Force-electric coupling characteristics of CORC cables under bending load

#### Shijie Shi

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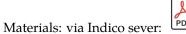
IAEA-CN-316-3279

# ANALYSIS AND SIMULATION OF EFFECTIVE RUNAWAY ELECTRON MITIGATION USING A PASSIVE COIL IN J-TEXT TOKAMAK

#### **Chang Liu**

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#### **Development of ITER Divertor Outer Vertical Target**

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IAEA-CN-316-3283



#### PERTURBATED MAGNETIC FIELD THRESHOLD OF EDGE COHERENT OSCILLATION DURING ELM MITIGATION BY N = 1 AND N=2 RMP

#### Tengfei Sun

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IAEA-CN-316-3286

### THE RADIATIVE DIVERTOR AND IN/OUT ASYMMETRY IN HL-2M BY IMPURITY SEEDING WITH FULL DRIFTS

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IAEA-CN-316-3288

# Simulation study of the effect of impurities on the nonlinear dynamic process of Edge-Localized-Modes

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IAEA-CN-316-3292



#### Experimental and Numerical Research on High-Temperature Superconducting Demountable Joints for Toroidal Field Coils of Tokamaks

#### Zhang Chi, Qin Lang

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IAEA-CN-316-3294

# CLUSTER DYNAMICS MODELING OF DEFECT EVOLUTION IN NEUTRON-IRRADIATED TUNGSTEN FOR FUSION APPLICATIONS

#### **Zhaofan Wang**

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# DEUTERIUM GAS-DRIVEN PERMEATION AND RETENTION IN LA2O3, Y2O3, AND ZRO2 DISPERSION-STRENGTHENED TUNGSTEN

#### Zeshi Gao

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IAEA-CN-316-3296

# Experimental research on the penetration behavior of compact toroid fueling on EAST

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IAEA-CN-316-3297



# A Novel High-Temperature Superconducting Cable Design for Compact Tokamaks

#### Qin Lang, Wu Run

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# THE RESEARCH OF THE STABILITY OF REVERSED SHEAR ALFVÃN EIGENMODES EXCITED BY ENERGETIC PARTICLES IN HL-2A

#### Wenyang Li

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### IMPACT OF NEUTRAL PARTICLES ON BEAM-ION LOSSES IN EAST TOKAMAK

#### zixin Zhang

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IAEA-CN-316-3307

# Tungsten limiter Start-up experiments in different boronization states in support of ITER

#### Jörg Hobirk

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IAEA-CN-316-3308



# Modeling of wall material evolution and the impact on edge particle recycling for long pulse discharges in EAST

#### Guoliang XU

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IAEA-CN-316-3309

### EXPERIMENTAL STUDY ON THE MIGRATION PROCESS OF ADATOM IN THE GROWTH DYNAMIC OF FUZZ

#### Zhe Liu

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IAEA-CN-316-3312



### DEVELOPMENT OF A THREE-DIMENSIONAL SIMULATION CODE FOR SCRAPE-OFF LAYER PLASMAS

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IAEA-CN-316-3313

### **Experimental and Simulation Study of Plasma Detachment in the Linear Plasma Device MPS-LD**

#### **Chaofeng Sang**

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IAEA-CN-316-3314



#### ACCESSING STABLE OPERATIONAL WINDOWS IN K-DEMO

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IAEA-CN-316-3315

# THE INFLUENCE OF EÃB DRIFT COMBINED WITH DIVERTOR DOME ON PLASMA DETACHMENT IN CFETR BY USING SOLPS-ITER

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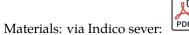
IAEA-CN-316-3316

# Experimental observation of zonal flow-like oscillation in Chinese first quasi-axisymmetric stellarator-test device

#### Xi Chen

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### CERMET ALLOYS FOR HYBRID FISSION-FUSION NUCLEAR REACTOR

#### Juana L Gervasoni

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IAEA-CN-316-3318

# Experimental observation of streamer-like structure enhancing turbulent transport in scrape-off layer of HL-2A tokamak

#### Jian Chen

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IAEA-CN-316-3319

# ADVANCES IN PHYSICS AND APPLICATIONS OF 3D MAGNETIC PERTURBATIONS ON THE J-TEXT TOKAMAK

#### Nengchao Wang

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IAEA-CN-316-3321



# TEMO: a comprehensive and versatile equilibrium modelling toolbox for tokamak operations

#### Zhengbo Cheng

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IAEA-CN-316-3322

### THE DIVERTOR TOKAMAK TEST FACILITY RESEARCH PLAN

#### Piero Martin

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IAEA-CN-316-3323

### OVERVIEW OF RECENT EXPERIMENTAL RESULTS ON EAST IN SUPPORT OF ITER NEW RESEARCH PLAN

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IAEA-CN-316-3326

### RECENT PROGRESS ON THE SUNIST-2 SPHERICAL TOKAMAK

#### Yi Tan

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IAEA-CN-316-3327



# INNOVATIVE AND EFFICIENT PLASMA MAGNETIC CONFINEMENT METHOD BASED ON AN OVERLOOKED HISTORICAL DISCOVERY

#### **Martin STOREY**

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IAEA-CN-316-3329



### A novel method to optimize omnigenity like quasisymmetry for stellarators

#### Caoxiang Zhu

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IAEA-CN-316-3330

### Insights from fast-ion physics studies on JET in support of JT-60SA and ITER rebaseline

#### Yevgen Kazakov

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IAEA-CN-316-3333

### NTST, A NEGATIVE TRIANGULARITY SPHERICAL TOKAMAK

#### Yi Tan

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IAEA-CN-316-3334

#### TURBULENCE-TRANSPORT COUPLING SIMULATION STUDY OF THE ELM DYNAMICS FROM HIGH RECYCLING ATTACHED REGIME TO IMPURITY SEEDED DETACHMENT REGIME WITHIN EDGE PLASMA COUPLING SIMULATION (EPCS) FRAMEWORK

#### TianYuan Liu

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IAEA-CN-316-3336



# OVERVIEW OF ST40 RESULTS AND FUTURE: EXPANDING THE PHYSICS BASIS OF HIGH-FIELD SPHERICAL TOKAMAKS

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IAEA-CN-316-3337

#### SIMULATION OF FUEL INVENTORY IN DAMAGED TUNGSTEN UNDER SIMULTANEOUS HYDROGEN AND DEUTERIUM: SYNERGISTICAL EFFECT OF DEFECT ANNEALING AND ISOTOPE EXCHANGE

#### Zhenhou Wang

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IAEA-CN-316-3338

#### ENERGETIC PARTICLE DISTRIBUTIONS FOR QUANTITATIVE CALCULATIONS OF BURNING PLASMA STABILITY

#### **Simon Pinches**

Simon Pinches (ITER Organization), ITER Organization

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### Tokamak Energy's high temperature superconducting magnet spherical tokamak fusion pilot plant concept

#### Nicolas Lopez

Nicolas Lopez (Tokamak Energy Ltd), United Kingdom

 ${\it Corresponding Author: Nicolas Lopez, Nicolas Lopez < nicolas.lopez @tokamakenergy.com > 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1$ 

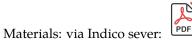
IAEA-CN-316-3341

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

#### Jiayi Zhang

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### PLASMA CURRENT AND POSITION CONTROL IN KTM TOKAMAK

#### Aleksei Li, Baurzhan Chektybayev

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IAEA-CN-316-3344

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

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IAEA-CN-316-3345



### CONTROLLED NUCLEAR FUSION FOR THE ENERGY TRANSITION, HEALTH, AND INDUSTRY

#### **GERVASONI** Gervasoni

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IAEA-CN-316-3346

# FUSION STUDIES WITH SMALL AND TABLETOP PLASMA FOCUS DEVICES: INVESTIGATIONS ON NEW OPERATIONAL REGIMES, NON-EQUILIBRIUM THERMODYNAMICS, EXTREME MATERIAL CONDITIONS, AND BIOLOGICAL EFFECTS

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IAEA-CN-316-3348



### Challenges and Achievements in IFMIF-DONES Neutronics Activities

#### Yuefeng Qiu

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Corresponding Author: Yuefeng Qiu, YuefengQiu < yuefeng.qiu@kit.edu > information (information of the context of the context

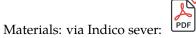
IAEA-CN-316-3350

# PLASMA PREDICTION AND SIMULATION IN SUPPORT OF REACTOR DESIGN AND OPERATION AT TOKAMAK ENERGY

#### Michele Romanelli

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#### The physics of ELM-free regimes in EUROfusion tokamaks

#### Michael Dunne

Michael Dunne (IPP-Garching), Germany

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#### BOUT++ SIMULATION STUDY OF THE EFFECT OF RESONANT MAGNETIC PERTURBATION ON THE TURBULENCE TRANSPORT

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IAEA-CN-316-3356

#### Fusion-relevant tritium interactions with SS316L stainless steel

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# ANALYSIS OF FAST ION DISTRIBUTIONS USING NEUTRON EMISSION SPECTROSCOPY IN NBI-ICRF SYNERGISTIC HEATING PLASMA ON EAST

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# TARGETS DEVELOPED IN THE 21ST CENTURY AT THE P.N. LEBEDEV PHYSICAL INSTITUTE OF RAS TO STUDY THE EXTREME MATTER PHYSICS USING HIGH-POWER LASER FACILITIES

#### Nataliya Borisenko

 $\it Nataliya \, Borisenko \, (P.N. \, Lebedev \, Physical \, Institute \, of \, the \, Russian \, Academy \, of \, Sciences), \, Russia \, Corresponding \, Author: \, Nataliya \, Borisenko, \, Nataliya \, Borisenko \, < \, borisenkong@lebedev.ru \, > \, IAEA-CN-316-3359$ 

#### Establishment and Progress of Korean Fusion Reactor Design Activities: A Coordinated National Approach

#### Jae-Min Kwon

Jae-Min Kwon (Korea Institute of Fusion Energy, Daejeon), Korea, Republic of

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IAEA-CN-316-3360

# PERFORMANCE EVALUATION OF TUNGSTEN FIBER-REINFORCED TUNGSTEN COMPOSITES DEVELOPED AT SWIP FOR APPLICATION IN NUCLEAR FUSION REACTORS

#### Juan Du

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IAEA-CN-316-3364

### HIGH-HEAT-FLUX PERFORMANCE OF MONOBLOCK TARGET PREPARED WITH ADVANCED W-K PLATE

#### Fan Feng

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IAEA-CN-316-3365



#### THE INTERACTION BETWEEN THE EDGE DISLOCATION AND THE DISLOCATION LOOP-BUBBLE COMPLEX UNDER SHEAR STRESS IN BCC IRON

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IAEA-CN-316-3366



#### ITER Core Machine Assembly Progress

#### Jens Reich

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IAEA-CN-316-3368

Materials: via Indico sever:



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#### PHYSICAL MODEL FOR TESTING STRUCTURAL MATERIALS OF FUSION REACTORS UNDER PLASMA AND THERMAL IMPACT

#### Igor Andreevich Sokolov

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### OVERALL PERFORMANCE OF THE HOUR-LEVEL ALTERNATING HYBRID INTEGRATOR

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# TOWARD THE DESIGN VALIDATION OF WATER-COOLED CERAMIC BREEDER TEST BLANKET MODULE IN PHYSICAL MOCK-UP TESTING

#### Wenhai Guan

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IAEA-CN-316-3372

### CFETR NEUTRONICS BENCHMARK CROSSCHECKING USING JMCT

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IAEA-CN-316-3376

#### Safety Regulation of Fusion Facilities in the Russian Federation

#### Mikhail Polyanskii

Mikhail Polyanskii (Scientific and Engineering Centre for Nuclear and Radiation Safety (SEC NRS)), Russia

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### RECENT ADVANCES OF WATER DETRITIATION TECHONOLOGIES

#### Jinguang Cai

Jinguang Cai (Institute of Materials, China Academy Of Engineering Physics), China

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#### [OV POSTER TWIN] Overview of CRAFT project progress

#### Jiangang Li

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### [OV POSTER TWIN] PROGRESS OF ITER AND ITS VALUE FOR FUSION

#### Pietro barabaschi

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### [OV POSTER TWIN] FIRST JT-60SA PLASMA OPERATION AND PLANS IN VIEW OF ITER AND DEMO

#### Jeronimo Garcia

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#### [OV POSTER TWIN] RECENT ADVANCES IN PLASMA CONTROL AND PHYSICS RESEARCH IN THE LARGE HELICAL DEVICE

#### Kenji Tanaka

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# [OV POSTER TWIN] OVERVIEW OF THE MAST UPGRADE PHYSICS PROGRAMME: TESTING NOVEL CONCEPTS AT LOW ASPECT RATIO TO INFORM FUTURE DEVICES

#### **James Harrison**

James Harrison (United Kingdom Atomic Energy Authority), United Kingdom

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### [OV POSTER TWIN] Strategic plan to demonstrate heatwave-driven laser fusion with fast ignition scheme

#### Yasuhiko Sentoku

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# [OV POSTER TWIN] Results from the last DD and DT JET campaigns in the framework of the EUROfusion Tokamak Exploitation activity

#### Marco Wischmeier

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### [OV POSTER TWIN] Progress and innovations in the TCV tokamak research programme

#### **Christian Theiler**

Christian Theiler (EPFL-SPC), Switzerland

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IAEA-CN-316-3388

#### [OV POSTER TWIN] Recent advances at the Globus-M2 tokamak

#### Nikolai Bakharev

Nikolai Bakharev (Ioffe Institute), Russia

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### [OV POSTER TWIN] TOWARDS DIGITAL TWINS OF FUSION SYSTEMS

#### Frank Jenko

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IAEA-CN-316-3390



### [OV POSTER TWIN] OVERVIEW OF ACHIEVEMENTS AND OUTLOOK OF THE IFMIF/EVEDA PROJECT

#### Kazuo HASEGAWA

Kazuo HASEGAWA (QST), Japan

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### [OV POSTER TWIN] OVERVIEW OF THE KSTAR EXPERIMENTS AND FUTURE PLAN

#### YongUn Nam

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#### [OV POSTER TWIN] Overview of ASDEX Upgrade results

#### Thomas PÃ1/4tterich

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#### [OV POSTER TWIN] OVERVIEW OF UKAEAâS INTEGRATED FUSION TECHNOLOGY PROGRAMMES, EMPHASISING A DIGITAL FIRST STRATEGY

#### **Rachel Lawless**

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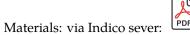


### [OV POSTER TWIN] Overview of the DONES Experimental Programme

#### Angel Ibarra

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### [OV POSTER TWIN] OVERVIEW OF WEST CONTRIBUTIONS TO THE NEW ITER BASELINE AND FUSION POWER PLANTS

#### Jerome Bucalossi

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### [OV POSTER TWIN] Overview of Wendelstein 7-X high-performance operation

#### Olaf Grulke

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## [OV POSTER TWIN] OVERVIEW OF RECENT EXPERIMENTAL RESULTS ON EAST IN SUPPORT OF ITER NEW RESEARCH PLAN

#### Xianzu Gong

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IAEA-CN-316-3400

# [OV POSTER TWIN] OVERVIEW OF ST40 RESULTS AND FUTURE: EXPANDING THE PHYSICS BASIS OF HIGH-FIELD SPHERICAL TOKAMAKS

#### Otto Asunta

Otto Asunta (Tokamak Energy Ltd.), United Kingdom

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#### [OV POSTER TWIN] HL-3 RESEARCH TOWARDS HIGH-PERFORMANCE PLASMA AND POWER EXHAUST SOLUTION

#### Wulyu Zhong

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### NON-EVAPORABLE GETTER APPLICATION IN FUSION REACTORS

#### Jie Wang

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IAEA-CN-316-3404

# [REGULAR POSTER TWIN] CHANGE OF WALL MATERIAL FROM BERYLLIUM TO TUNGSTEN IN THE NEW ITER BASELINE: PHYSICS BASIS, IMPLICATIONS FOR RESEARCH PLAN AND WALL DESIGNS FOR ITS OPERATIONAL PHASES

#### Alberto Loarte

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IAEA-CN-316-3405

### [REGULAR POSTER TWIN] RECOVERY OF ITER SECTOR MODULES FROM CRITICAL ISSUES

#### **Chang Hyun Noh**

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#### [REGULAR POSTER TWIN] ACHIEVEMENT AT THE ITER NEUTRAL BEAM TEST FACILITY AND PROSPECTS FOR THE R&D ACTIVITIES WITHIN THE ITER RESEARCH PLAN

#### Diego Marcuzzi

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IAEA-CN-316-3407



### [REGULAR POSTER TWIN] THE 2024 NEW BASELINE ITER RESEARCH PLAN

#### Siwoo Yoon

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### [REGULAR POSTER TWIN] ITER Core Machine Assembly Progress

#### Jens Reich

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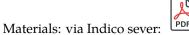


### [REGULAR POSTER TWIN] Hierarchy of turbulent transport models with the SOLEDGE3X code

#### **Hugo Bufferand**

Hugo Bufferand (CEA), France

 $\label{eq:corresponding Author: Hugo Buffer and Augo Buffer and Cornel Formula Control Formu$ 



### [REGULAR POSTER TWIN] The physics basis for implementing Alternative Divertor Configurations on reactors

#### Kevin Verhaegh

Kevin Verhaegh (CCFE), Netherlands

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### [REGULAR POSTER TWIN] Validated, global edge-SOL turbulence simulations in various ELM-free regimes

#### Wladimir Zholobenko

Wladimir Zholobenko (Max Planck Institute for Plasma Physics), Germany

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### [REGULAR POSTER TWIN] Integrated Modelling activities in support of the ITER re-baseline

#### Mireille SCHNEIDER

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### [REGULAR POSTER TWIN] High performance ELM-free semi-detached scenario sustained at high-current in JET DTE3

#### Carine Giroud

Carine Giroud (UKAEA), United Kingdom

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### [REGULAR POSTER TWIN] The physics of ELM-free regimes in EUROfusion tokamaks

#### Michael Dunne

Michael Dunne (IPP-Garching), Germany

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#### [REGULAR POSTER TWIN] WEST LONG-PULSE ACHIEVEMENTS IN SUPPORT OF NEXT-STEP FUSION DEVICES

#### Remi Dumont

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### [REGULAR POSTER TWIN] DEVELOPMENT OF HIGH-PERFORMANCE LONG-PULSE DISCHARGE IN KSTAR

#### **HYUNSEOK KIM**

HYUNSEOK KIM (Korea Institute of Fusion Energy (KFE)), Korea, Republic of

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## [REGULAR POSTER TWIN] Attaining Tokamak level performance through plasma density profile shaping at Wendelstein 7-X

#### Sebastian Bannmann

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IAEA-CN-316-3422

#### [REGULAR POSTER TWIN] DEVELOPMENT OF STEADY-SATE OPERATION SCENARIOS WITH FULL TUNGSTEN LIMITER/DIVERTOR IN ITER-RELEVANT CONFIGURATION ON EAST

#### Juan Huang

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IAEA-CN-316-3424



# [REGULAR POSTER TWIN] Prediction of the implosion dynamics via AI enhanced simulations for the Double-Cone Ignition Scheme

#### Fuyuan Wu

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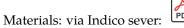


### [REGULAR POSTER TWIN] DEVELOPMENT OF INNOVATIVE REPEATABLE POWER LASER FOR LASER FUSION

#### Jumpei Ogino

Jumpei Ogino (Osaka university), Japan

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### [REGULAR POSTER TWIN] HIGH GAIN FUSION BURNING IN INERTIAL CONFINEMENT FUSION PLASMA

#### Yasunobu Arikawa

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### [REGULAR POSTER TWIN] Foams as a Pathway to Energy from Inertial Fusion (FoPIFE): overview of recent results

#### sebastien Le Pape

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# [REGULAR POSTER TWIN] TARGETS DEVELOPED IN THE 21ST CENTURY AT THE P.N. LEBEDEV PHYSICAL INSTITUTE OF RAS TO STUDY THE EXTREME MATTER PHYSICS USING HIGH-POWER LASER FACILITIES

#### Nataliya Borisenko

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# [REGULAR POSTER TWIN] Thermal quench dynamics and heat flux distribution during massive-impurity-injection triggered disruption in EAST

#### Long Zeng

Long Zeng (Tsinghua University), China

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#### [REGULAR POSTER TWIN] ANALYSIS AND SIMULATION OF EFFECTIVE RUNAWAY ELECTRON MITIGATION USING A PASSIVE COIL IN J-TEXT TOKAMAK

#### **Chang Liu**

Chang Liu (Peking University), China

 $Corresponding \ Author: \ Chang \ Liu, \ Chang \ Liu < goduck 777@gmail.com >$ 

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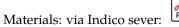
## [REGULAR POSTER TWIN] FIRST EDGE-LOCALIZED MODE SUPPRESSION WITH LOWER HYBRID WAVES ON THE EAST TOKAMAK

#### **Shaocheng Liu**

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IAEA-CN-316-3437



### [REGULAR POSTER TWIN] NEW UNDERSTANDING OF RESONANT LAYER RESPONSE VIA EXTENDED DRIFT MHD

#### Jong Kyu Park

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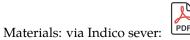
## [REGULAR TWIN POSTER] FIRST SOLPS-ITER WIDE GRID SIMULATIONS OF THE ITER BURNING PLASMA SCRAPE-OFF LAYER

#### Elizaveta Kaveeva

Elizaveta Kaveeva (Peter the Great St. Petersburg Polytechnic University), Russia

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### [REGULAR TWIN POSTER] Modelling divertor solutions for power exhaust: in-depth experimental validation in TCV

#### Elena Tonello

Elena Tonello (Ecole Polytechnique FÃ@dÃ@rale de Lausanne (EPFL) - Swiss Plasma Center (SPC)), Switzerland

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## [REGULAR TWIN POSTER] Drift flows impact island divertor operation in Wendelstein 7-X

#### Carsten Killer

Carsten Killer (Max-Planck-Institute for Plasma Physics, Greifswald, Germany), Germany

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### [REGULAR TWIN POSTER] ANALYSIS OF FUEL RETENTION AND RECOVERY IN JET WITH BE-W WALL

#### **Dmitry Matveev**

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## [REGULAR TWIN POSTER] THE DIVERTOR TOKAMAK TEST FACILITY: MACHINE DESIGN, CONSTRUCTION AND COMMISSIONING

#### Gian Mario Polli

Gian Mario Polli (ENEA, DTT Scarl), Italy

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## [REGULAR TWIN POSTER] WEST OPERATION â" RELIABILITY AND AVAILABILITY OF A LONG PULSE FUSION TOKAMAK

#### Valerie LAMAISON

Valerie LAMAISON (CEA Cadarache), France

IAEA-CN-316-3448



### [REGULAR TWIN POSTER] Design and qualification activity of the first divertor of the DIVERTOR TOKAMAK TEST FACILITY

#### Selanna Roccella

Selanna Roccella (ENEA), Italy

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#### [REGULAR TWIN POSTER] ACTIVELY COOLED PLASMA FACING COMPONENTS DESIGN FOR W7-X AND JT-60SA IN SUPPORT OF THE ITER DIVERTOR

#### Marianne Richou

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# [REGULAR TWIN POSTER] PERFORMANCE EVALUATION OF TUNGSTEN FIBER-REINFORCED TUNGSTEN COMPOSITES DEVELOPED AT SWIP FOR APPLICATION IN NUCLEAR FUSION REACTORS

#### Juan Du

Juan Du (Southwestern Institute of Physics (SWIPi¼), China

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IAEA-CN-316-3452



## [REGULAR TWIN POSTER] H-mode operation scenarios in JT-60SA initial research phase predicted by integrated core-pedestal-SOL/divertor simulation

#### Nobuyuki AIBA

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### [REGULAR TWIN POSTER] UK STEP TOWARDS A FUSION POWER PLANT PLASMA

#### Hendrik Meyer

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IAEA-CN-316-3454



## [REGULAR TWIN POSTER] A TALE OF TWO (VISCO)CITIES Electromagnetic Turbulence and Transport Bifurcations: Implications for Next- Generation Fusion Power Plants

#### **Daniel Kennedy**

Daniel Kennedy (UKAEA), United Kingdom

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IAEA-CN-316-3455

# [REGULAR TWIN POSTER] GLOBAL DISPERSION AND NONLINEAR DYNAMICS IN PLASMAS MODELED FOR JT-60U STRONGLY REVERSED MAGNETIC SHEAR CONFIGURATION EXHIBITING A SIGNATURE OF ITBS FROM L-MODE CHARACTERISTICS

#### Rui Zhao

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IAEA-CN-316-3457



#### [REGULAR TWIN POSTER] DEVELOPMENT OF DATA ASSIMILATION SYSTEM ASTI TOWARD DIGITAL TWIN CONTROL OF FUSION PLASMA

#### Yuya Morishita

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### [REGULAR TWIN POSTER] ITER DISRUPTION MITIGATION SYSTEM DESIGN AND APPLICATION STRATEGY

#### Stefan Jachmich

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#### [REGULAR TWIN POSTER] TRT PLASMA CONTROL COMPLEXES CONCEPTUAL DESIGN ON THE BASE OF THE ITER FUSION TECHNOLOGY DEVELOPMENT

#### **Anatoly Krasilnikov**

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IAEA-CN-316-3461



#### [REGULAR TWIN POSTER] Development of Low Inductive Electric Field Plasma Start-up in JT-60SA

#### Takuma Wakatsuki

Takuma Wakatsuki (National Institutes for Quantum Science and Technology), Japan

IAEA-CN-316-3463

#### [REGULAR TWIN POSTER] MULTI-MACHINE VALIDATION OF PLASMA INITIATION MODELLING AND PROSPECTS FOR FUTURE DEVICES

#### Hyun-Tae Kim

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IAEA-CN-316-3464



### [REGULAR TWIN POSTER] DIRECT CONTROL OF TURBULENCE FOR IMPROVED PLASMA CONFINEMENT

#### Toshiki Kinoshita

Toshiki Kinoshita (Kyushu university), Japan

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#### [REGULAR TWIN POSTER] DEVELOPMENT OF EQUILIBRIUM CONTROL SIMULATOR AND EXPERIMENTAL VALIDATION OF ADVANCED ISO-FLUX EQUILIBRIUM CONTROL DURING THE FIRST OPERATIONAL PHASE OF JT-60SA

#### Shizuo Inoue

Shizuo Inoue (QST), Japan

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IAEA-CN-316-3466

### [REGULAR TWIN POSTER] PLASMA CONTROL EXPERIMENTS IN JET DEUTERIUM-TRITIUM PLASMAS

#### Matteo Baruzzo

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IAEA-CN-316-3467



#### [REGULAR TWIN POSTER] Comprehensive Simulations of Bursting and Non-Bursting Alfvén Waves in ICRF Heated Tokamak Plasmas

#### **JIALEI Wang**

JIALEI Wang (National Institute for Fusion Science), Japan

Corresponding Author: JIALEI Wang, JIALEIWang < wang.jialei@nifs.ac.jp >

IAEA-CN-316-3469

### [REGULAR TWIN POSTER] Turbulence, zonal flows, and global modes in burning plasmas: code development and simulations

#### Axel Könies

Axel KÃ $\P$ nies (Max-Planck-Institut fÃ $\frac{1}{4}$ r Plasmaphysik), Germany

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IAEA-CN-316-3470

### [REGULAR TWIN POSTER] THEORY AND SIMULATION OF PHASE SPACE TRANSPORT IN BURNING PLASMAS

#### Fulvio Zonca

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IAEA-CN-316-3471

## [REGULAR TWIN POSTER] FUSION ALPHA-PARTICLE-DRIVEN ALFVEN EIGENMODES IN JET DT PLASMAS: EXPERIMENTS AND THEORY

#### Sergei Sharapov

Sergei Sharapov (UKAEA), United Kingdom

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IAEA-CN-316-3472



## [REGULAR TWIN POSTER] Advancing Tritium Fueling for DT Fusion in HL-3: Innovations in SMBI Techniques and Physics-Based Tritium Fueling Strategies

#### **Guoliang Xiao**

Guoliang Xiao (Southwestern Institute of Physicsi¼China), China

 $Corresponding \ Author: \ Guoliang \ Xiao, \ Guoliang \ Xiao < xiaogl@swip.ac.cn >$ 

IAEA-CN-316-3473

## [REGULAR TWIN POSTER] JOREK simulation of injection assimilation and radiation asymmetry during ITER H-mode dual SPIs

#### Di Hu

Di Hu (Beihang University), China

Corresponding Author: Di Hu, DiHu < hudi2@buaa.edu.cn >

IAEA-CN-316-3474



## [REGULAR TWIN POSTER] Hybrid kinetic-MHD studies of runaway electron beam termination events

#### Hannes Bergström

Hannes BergstrĶm, Germany

 $Corresponding \ Author: \ Hannes \ Bergstr \~A \Pm, \ Hannes \ Bergstrm < hannes \ bergstroem@ipp.mpg.de > 1000 \ Author: \ Annes \ Bergstr \ref{eq:hannes} \ Annes \ Bergstroem@ipp.mpg.de > 1000 \ Author: \ Annes \ Bergstr \ref{eq:hannes} \ Annes \ Bergstr \ref{eq:hannes} \ Annes \ Bergstroem@ipp.mpg.de > 1000 \ Author: \ Annes \ Bergstr \ref{eq:hannes} \ Annes \ Bergstroem@ipp.mpg.de > 1000 \ Author: \ Annes \ Annes \ Author: \ Annes \ Annes \ Author: \ Annes \$ 

IAEA-CN-316-3475



## [REGULAR TWIN POSTER] Piecewise omnigenous fields: a radically new family of optimized magnetic fields for stellarator reactors

#### Jose Luis Velasco Garasa

Jose Luis Velasco Garasa (Laboratorio Nacional de Fusi $\tilde{A}^3$ n, CIEMAT), Spain

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IAEA-CN-316-3476



# [REGULAR TWIN POSTER] MODELLING OF MILDLY RELATIVISTIC RUNAWAY ELECTRONS â"DEVELOPMENT OF REDUCED-KINETIC MODEL AND VALIDATION IN KSTAR OHMIC STARTUP

#### Yeongsun Lee

Yeongsun Lee (Seoul national university/Seoul), Korea, Republic of

 $Corresponding \ Author: \ Yeongsun \ Lee, \ Yeongsun Lee < 00pago00@gmail.com > 10pago00$ 

IAEA-CN-316-3477

### [REGULAR TWIN POSTER] A novel method to optimize omnigenity like quasisymmetry for stellarators

#### Caoxiang Zhu

Caoxiang Zhu (University of Science and Technology of China), China

 $Corresponding \ Author: \ Caoxiang \ Zhu, \ Caoxiang \ Zhu < caoxiang \ Zhu @gmail.com > 1 \ Author: \ Caoxiang \ Zhu = 1$ 

IAEA-CN-316-3478



#### [REGULAR TWIN POSTER] OVERVIEW OF THE DCLL BREEDING BLANKET FOR HELIAS 5-B AND FURTHER STEPS TOWARDS A NOVEL QI DEVICE

#### **IOLE PALERMO**

IOLE PALERMO (CIEMAT), Spain

 $Corresponding \ Author: \ IOLE\ PALERMO, IOLEPALERMO < iole.palermo@ciemat.es>$ 

IAEA-CN-316-3479



## [REGULAR TWIN POSTER] ANTICIPATING TRITIUM IMPACT AND TRANSFER IN FISSION AND FUSION POWERPLANTS

#### **Elodie Bernard**

Elodie Bernard (CEA Cadarache), France

Corresponding Author: Elodie Bernard, Elodie Bernard < elodie.bernard@cea.fr >

IAEA-CN-316-3480

## [REGULAR TWIN POSTER] NEUTRONICS FOR ITER NUCLEAR PHASE: INSIGHTS AND LESSONS LEARNT FROM JET DT OPERATION

#### Rosaria Villari

Rosaria Villari (ENEA), Italy

 $\label{eq:corresponding Author: Rosaria Villari, Rosaria Villari < rosaria. villari @enea. it > \\$ 

IAEA-CN-316-3481



### [REGULAR TWIN POSTER] EXPERIMENTAL STUDY ON TRITIUM RELEASE FROM LI2TIO3 PEBBLES AS TRITIUM BREEDER THROUGH INTERNATIONAL COLLABORATION BETWEEN KOREA AND CHINA

#### Yi-Hyun PARK

Yi-Hyun PARK (Korea Institute of Fusion Energy), Korea, Republic of

Corresponding Author: Yi-Hyun PARK, Yi-HyunPARK < yhpark@kfe.re.kr >

IAEA-CN-316-3482

### [REGULAR TWIN POSTER] Accomplishment of high duty cycle beam commissioning of Linear IFMIF Prototype Accelerator (LIPAc) at 5 MeV, 125 mA D+

#### Tomoya Akagi

Tomoya Akagi (QST), Japan

Corresponding Author: Tomoya Akagi, TomoyaAkagi < akagi.tomoya@qst.go.jp > akagi, Tomoya

IAEA-CN-316-3483

# [REGULAR TWIN POSTER] Simulation of tungsten erosion and edge-to-core transport in neon-seeded JET plasmas

#### Henri Kumpulainen

Henri Kumpulainen (FZJ), Germany

 $\label{lem:corresponding Author: Henri Kumpulainen, Henri Kumpulaine$ 

IAEA-CN-316-3485

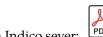
# [REGULAR TWIN POSTER] Theory-based integrated modelling of tungsten transport: validation in present-day tokamaks and predictions for ITER

#### Daniel Fajardo

Daniel Fajardo (Max Planck Institute for Plasma Physics), Germany

 $Corresponding \ Author: \ Daniel \ Fajardo, \ Daniel Fajardo < daniel. fajardo@ipp.mpg.de >$ 

IAEA-CN-316-3486



# [REGULAR TWIN POSTER] TESTING TUNGSTEN PLASMA FACING COMPONENTS IN WEST AND AUG TOKAMAKS: LESSONS FOR ITER

#### yann corre

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Corresponding Author: yann corre, yanncorre < yann.corre@cea.fr >

IAEA-CN-316-3487



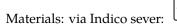
# [REGULAR TWIN POSTER] Tungsten limiter Start-up experiments in different boronization states in support of ITER

#### Jörg Hobirk

Jörg Hobirk (IPP Garching), Germany

Corresponding Author: Jörg Hobirk, JrgHobirk < joerg.hobirk@ipp.mpg.de > 1

IAEA-CN-316-3489



### [REGULAR TWIN POSTER] RESULTS OF ELECTRON CYCLOTRON HEATING AND CURRENT DRIVE SYSTEM OPERATION IN THE INTEGRATED COMMISSIONING PHASE ON JT-60SA

#### Hibiki Yamazaki

 $\label{thm:conditional} \emph{Hibiki Yamazaki (National Institutes for Quantum Science and Technology (QST)), Japan} \\ Corresponding Author: Hibiki Yamazaki, <math>HibikiYamazaki < yamazaki.hibiki@qst.go.jp > \\ IAEA-CN-316-3490 \\$ 

# [REGULAR TWIN POSTER] First performance test of multi-frequency gyrotron for ITER and fusion devices

#### Takahiro Shinya

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IAEA-CN-316-3491



### [REGULAR TWIN POSTER] PERFORMANCE OF JT-60SA SUPERCONDUCTING MAGNET OPERATION IN INTEGRATED COMMISSIONING TEST

#### Katsuhiko TSUCHIYA

Katsuhiko TSUCHIYA (QST, Naka), Japan

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IAEA-CN-316-3492



### [REGULAR TWIN POSTER] OVERVIEW OF RECENT RESULTS IN RESEARCH TACKING REMOTE MAINTENANCE CHALLENGES OF FUTURE FUSION ENERGY DEVICES

#### **Robert Skilton**

Robert Skilton (UK Atomic Energy Authority), United Kingdom

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IAEA-CN-316-3493

### [REGULAR TWIN POSTER] Construction Progress of Chinese First Quasi-axisymmetric Stellarator (CFQS) and Preliminary Results in the CFQS-Test Device

#### Yuhong Xu

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IAEA-CN-316-3494



# [REGULAR TWIN POSTER] Peeling limited pedestals in JET, MAST-U and TCV: effect of density and isotope mass in deuterium and tritium-rich plasma on pedestal structure and stability and validation of pedestal predictions for ITER.

#### Lorenzo Frassinetti

Lorenzo Frassinetti (KTH Royal Institute of Technology), Sweden

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IAEA-CN-316-3498

# [REGULAR TWIN POSTER] CORE AND EDGE TRANSPORT OF SCENARIO WITH INTERNAL TRANSPORT BARRIER IN TRITIUM AND DEUTERIUM-TRITIUM PLASMAS IN JET WITH BE/W WALL

#### Costanza Maggi

Costanza Maggi (UKAEA), United Kingdom

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IAEA-CN-316-3499



### [REGULAR TWIN POSTER] DEVELOPMENT OF HIGH POLOIDAL BETA SCENARIO FOR LONG-PULSE OPERATION IN COLLABORATION BETWEEN DIII-D AND KSTAR

#### Youngmu Jeon

Youngmu Jeon (Korea Institute of Fusion Energy), Korea, Republic of

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IAEA-CN-316-3501

# [REGULAR TWIN POSTER] Fusion research and development strategy for JA DEMO investigated in QST

#### Hidenobu Takenaga

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IAEA-CN-316-3502

# [REGULAR TWIN POSTER] STEP: Driving a pathway to accelerated fusion delivery

#### **Howard Wilson**

Howard Wilson (UK Industrial Fusion Solutions), United Kingdom

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IAEA-CN-316-3503

# [REGULAR TWIN POSTER] Towards a Stellarator Fusion Reactor: Achievements of the European Stellarator Program

#### Felix Warmer

Felix Warmer (Max Planck Institute for Plasma Physics), Germany

 ${\tt Corresponding\ Author:\ Felix\ Warmer,\ FelixWarmer} < felix.warmer@ipp.mpg.de >$ 

IAEA-CN-316-3504

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### [REGULAR TWIN POSTER] Tokamak Energy's high temperature superconducting magnet spherical tokamak fusion pilot plant concept

#### Nicolas Lopez

Nicolas Lopez (Tokamak Energy Ltd), United Kingdom

 ${\it Corresponding Author: Nicolas Lopez, Nicolas Lopez < nicolas.lopez @tokamakenergy.com > 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1$ 

IAEA-CN-316-3505



### [REGULAR TWIN POSTER] Establishment and Progress of Korean Fusion Reactor Design Activities: A Coordinated National Approach

#### JAE MIN Kwon

JAE MIN Kwon (National Fusion Research Institute), Korea, Republic of

Corresponding Author: JAE MIN Kwon, JAEMINKwon < jmkwon74@kfe.re.kr > 1

IAEA-CN-316-3506

# Preliminary Engineering Analysis for CN HCCB TBM Regarding ITER New Baseline Scenario

#### XINGHUA WU

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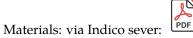
### NEXT-GENERATION NUCLEAR TECHNOLOGIES FOR NET-ZERO EMISSIONS: AN INTERDISCIPLINARY EVALUATION OF NUCLEAR FUSION

#### Godwin Okewu Omeje

Godwin Okewu Omeje, United Kingdom

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IAEA-CN-316-3509



# Surface damage and deuterium retention in tungsten under high-flux detached recombining linear plasmas

#### Jipeng Zhu

Jipeng Zhu (Institute of Materials, China Academy of Engineering and Physcis), China

IAEA-CN-316-3512

# Highly effective hydrogen isotope separation through quantum sieving

#### Renjin Xiong

Renjin Xiong (Institute of Materials, China Academy of Engineering Physics), China

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IAEA-CN-316-3513

### Experimental Detection of Charged Fusion Products in a Compact Electron-Catalyzed Fusion System Using Calibrated CR-39 Diagnostics

#### Zhifei Li

Zhifei Li (Alpha Ring US Inc.), United States

Corresponding Author: Zhifei Li, ZhifeiLi < fay@alpharing.com >

IAEA-CN-316-3514

### Predictive Modeling of Operational Stability in RF Negative Ion Sources Based on Experimental Parameters

#### Yang Li

Yang Li (East China University of Technology), China

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IAEA-CN-316-3518

### Numerical Simulation of Compositional Redistribution Driven by isotopologue Fractionation During Solidification of D-T Fuel in ICF Targets

#### Jiaqi Zhang

Jiaqi Zhang (The University of Osaka), Japan

Corresponding Author: Jiaqi Zhang, JiaqiZhang < zhang.jiaqi.ile@osaka - u.ac.jp > 1

IAEA-CN-316-3521

### OBSERVATION OF CORE ION ENERGY INCREASE CAUSED BY THE LANDAU DAMPING OF MHD WAVE IN THE PERIPHERY OF LHD PLASMA

#### Katsumi Ida

Katsumi Ida (National Institute for Fusion Science), Japan

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IAEA-CN-316-3522

### IMMERSIVE VR-BASED VISUALIZATION AND ANALYSIS OF FUSION PLASMAS USING DIGITAL-LHD AND VIRTUAL-LHD

#### Hiroaki Ohtani

Hiroaki Ohtani (National Institute for Fusion Science), Japan

IAEA-CN-316-3523

# OVERVIEW OF THE WEST-ITER DIAGNOSTIC INSTRUMENTATION (WIDIA) COLLABORATION ACTIVITIES

#### Didier Mazon

Didier Mazon (CEA Cadarache), France

 $\label{eq:corresponding Author: Didier Mazon, Didier Mazon < didier.mazon@cea.fr > \\$ 

IAEA-CN-316-3525



# Advanced Power Supply solutions Meeting High Standard for Fusion Research

#### Emanuele massarelli

Emanuele massarelli, Italy

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IAEA-CN-316-3527



# FIRST CAMPAIGN WITH ALTERNATIVE DIVERTOR CONFIGURATIONS IN ASDEX UPGRADE

#### Tilmann Lunt

Tilmann Lunt (Max-Planck-Institut  $f\tilde{A}^{1/4}r$  Plasmaphysik), Germany

 $\ \, {\it Corresponding Author: Tilmann Lunt, Tilmann Lunt < tilmann.lunt@ipp.mpg.de > }$ 

IAEA-CN-316-3530

# High-power stray radiation experiments for the ITER Upper Launcher with a real-size mock-up - First results

#### Falk Braunmüller

 $Falk\ Braunm\~A^14ller\ (EPFL\ (\~Acole\ Polytechnique\ F\~A@d\~A@rale\ de\ Lausanne)),\ Switzerland$  Corresponding Author: Falk Braunm\~A^14ller, FalkBraunmller< falk.braunmuller@epfl.ch> IAEA-CN-316-3531

### TITANIUM ADDITION AND THICKNESS VARIATION RESEARCH IN TUNGSTEN BLOCK BEHAVIOR AS FUSION PLASMA FACING FIRST WALL

#### Juana Gervasoni

Juana Gervasoni (CNEA), Argentina

 $Corresponding \ Author: \ Juana \ Gervasoni, \ Juana Gervasoni < juana. gervasoni @gmail.com > 1 \\$ 

IAEA-CN-316-3532



# Investigation of Broadband-laser-induced Plasma Interaction and ablation properties

#### Peipei Wang

Peipei Wang, China

Corresponding Author: Peipei Wang,  $PeipeiWang < ppwang_silp@163.com >$ 

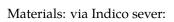
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## **IAEA Closing Address**

#### Mikhail Chudakov

 $\label{lem:mikhail Chudakov} \emph{Mikhail Chudakov} \emph{ (IAEA Deputy Director General and Head of the Department of Nuclear Energy), $N/A$ Corresponding Author: Mikhail Chudakov,}$ 

IAEA-CN-316-3534



# **Enabling Adaptive Detachment Control: Novel Insights from Calibration-Free X-Point Phase Difference**

#### Yue Yu

Yue Yu (Institute of Plasma Physics, Chinese Academy of Sciences), China

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IAEA-CN-316-3535

# EFFECTS OF THE MULTI-MODE ISLANDS ON THE RUNAWAY ELECTRON SUPPRESSION ON J-TEXT

#### **Zhifang Lin**

Zhifang Lin (Jiangsu Normal University), China

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IAEA-CN-316-3536



# NON-GYROKINETIC HIGH-FREQUENCY MODE INSTABILITY FOR TOKAMAK EDGE LIKE GRADIENTS

#### Mario Raeth

Mario Raeth (Max Planck Institute for Plasma Physics), Germany

 ${\it Corresponding Author: Mario Raeth, Mario Raeth < mario.raeth@ipp.mpg.de > }$ 

IAEA-CN-316-3538

### [REGULAR TWIN POSTER] LONG-PULSE ELM-FREE H-MODE REGIME WITH FEEDBACK-CONTROLLED DETACHMENT UNDER BORONIZED METAL WALL IN EAST

#### Guosheng Xu

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IAEA-CN-316-3539

## NF Awards 2024-2025 Announcement and Speeches

,N/A

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IAEA-CN-316-3540



#### **Announcement of FEC 2027 Venue**

#### Yeongkook Oh

Yeongkook Oh (President of Korea Institute of Fusion Energy), N/A

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IAEA-CN-316-3541



# Status and prospects of Fusion Research at the Southwestern Institute of Physics

#### Xuru Duan

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IAEA-CN-316-3543

#### FEC 2025 Administrative and Technical Remarks

#### IAEA Scientific Secretaries, Takashi Inoue, Elisabeth Wolfrum

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IAEA-CN-316-3544

### [REGULAR TWIN POSTER] OBSERVATION OF CORE ION ENERGY INCREASE CAUSED BY THE LANDAU DAMPING OF MHD WAVE IN THE PERIPHERY OF LHD PLASMA

#### Katsumi Ida

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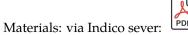
### [REGULAR TWIN POSTER] FIRST CAMPAIGN WITH ALTERNATIVE DIVERTOR CONFIGURATIONS IN ASDEX UPGRADE

#### Tilmann Lunt

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IAEA-CN-316-3546



# **Conference Closing**

### **Host Country Representative**

 $Host\ Country\ Representative, N/A$ 

Corresponding Author: Host Country Representative,

IAEA-CN-316-3547

