Agenda – Fusion Neutronics Meeting 2025: ITER and beyond

Day 1 – Monday 7 – "Salón de actos – Facultad de Educación"

08:50	**09:20**	**Opening session: UNED's rector + Subhash Puthanveetil + Michael Loughlin + Rafael Juárez**		
S1: Michael Loughlin (ORNL)				
09:20	**09:40**	ITER Radiation Maps Status, Roadmap, and Plan for 2025	Subhash Puthanveetil	ITER IO
09:40	**10:00**	EUROfusion Neutronics R&D Supporting ITER Nuclear Operations	Rosaria Villari	ENEA
10:00	**10:20**	Challenges and achievements in the IFMIF-DONES neutronics activities	Yuefeng Qiu	KIT
10:20	**10:40**	An overview of UKAEA's current fusion neutronics and radiometric activities	Tim Eade	UKIFS
10:40	**11:00**	An Overview of STEP Nuclear Analysis	James Hagues	UKAEA
11:00	**11:20**	**Coffee Break**		
S2: Subhash Puthanveetil (ITER IO)				
11:20	**11:40**	Overview of CEA neutronics activities in fusion reactors	Yannick Peneliau	CEA
11:40	**12:00**	Neutronics Studies in Korea for KODA Diagnostics, IBTF, and D1S Code Development	DoHyun Kim	KFE
12:00	**12:20**	Neutronics Tools used at ITER, a general overview	Gábor Náfrádi	ITER IO
12:20	**12:40**	F4E workflow for nuclear analyses	Aljaž Kolšek	F4E
12:40	**13:00**	A roadmap proposal for expanding usage and implementation of Openmc in ITER	Marco Fabbri	F4E
13:00	**14:00**	**Lunch**		
S3: Rosaria Villari (ENEA)				
14:00	**14:20**	Return of experience on compliance and typical levels of impurities of relevance for radioprotection in ITER materials	Marco Fabbri	F4E
14:20	**14:40**	ITER relevant water activation experiments at the JSI KATANA facility	Domen Kotnik	JSI
14:40	**15:00**	Simulation of water activation in the KATANA activation loop of the TRIGA reactor	Primož Lesjak	JSI
15:00	**15:20**	Delayed neutron measurements from activated water at the JSI KATANA facility with 3He and Lithium glass neutron detectors	Andrea Colangeli	ENEA
15:20	**15:40**	**Coffee Break**		
S4: Igor Lengar (JSI)				
15:40	**16:00**	Study of the ITER Activated Corrosion Products: from neutronics to corrosion and contamination analyses and experiments	Simone Noce	ENEA
16:00	**16:20**	Methodologies and uncertainties in the determination of activated corrosion products in the ITER WCLL TBM water cooling and purification systems	Alberto Previti	ENEA
16:20	**16:40**	Nuclear data for radiation transport in fusion devices: The Fusion Evaluated Nuclear Data Library (FENDL)	Daniel López Aldama	IAEA
16:40	**17:00**	JADE v4, a more robust and expandable architecture for neutronics V&V	Davide Laghi	F4E

Day 2 – Tuesday 8 – "Salón de actos – Facultad de Educación"

S1: Jonathan Shimwell (PF)				
09:00	**09:20**	F4Enix, a new Python API for pre and post processing of MCNP inputs and outputs	Alberto Bittesnich	F4E
09:20	**09:40**	Development of a rapid method for assessing the impact of material impurity deviations on the shutdown dose rate	Alex Valentine	UKAEA
09:40	**10:00**	Radiation transport model development with Gitronics applied to JT-60SA	Álvaro Cubí	F4E
10:00	**10:20**	New Developments in Attila4MC® Related to Fusion Neutronics	Jonathan Rogers	Silver Fir Software
10:20	**10:40**	Variance Reduction Capabilities Within a Cloud-Based OpenMC Interface	Stephen J. Coleman	RadiaSoft
10:40	**11:00**	Extended Adjoint Driven Importance Solution (XADIS)	Andrea Saltos	CFS
11:00	**11:20**	**Coffee Break**		
S2: Tim Eade (UKIFS)				
11:20	**11:40**	Accelerating and Optimizing Neutronic Simulations with Differentiable Neural Operator-based Surrogate Models	Nikita Khvatkin Petrovsky	HI Iberia
11:40	**12:00**	Surrogate-Enhanced Simulation Workflows for Fast and Efficient Neutronics Calculations	William Smith	University of Manchester
12:00	**12:20**	Machine learning for the design of GENeuSIS: a neutron test bed facility for diagnostics and critical components of ITER	Marta Damiano	University of Rome
12:20	**12:40**	Neutron shielding of low aspect ratio torii modeled by Monte Carlo methods and Machine Learning	Alan Ott	Renaissance Fusion
12:40	**13:00**	Parametric Neutronics Study and Machine Learning-Based Tritium Breeding Ratio Prediction for the ARC Tokamak	Austin Carter	CFS
13:00	**14:00**	**Lunch**		
S3: Iole Palermo (CIEMAT)				
14:00	**14:20**	Fusion Neutronics Developments for Fusion REactor Design and Assessment (FREDA)	Jin Whan Bae	ORNL
14:20	**14:40**	An open-source hybrid unstructured mesh—CAD fusion multiphysics analysis workflow	Guillaume Giudicelli	INL
14:40	**15:00**	Neutron transport simulations for an automated parametric integrated stellarator design	Jonathan Shimwell	Proxima Fusion
15:00	**15:20**	Discontinuous-Galerkin based Deterministic Neutronics for Stellarator design	Timo J. Bogaarts	Eindhoven University of Technology
15:20	**15:40**	**Coffee Break**		
S4: Davide Flammini (ENEA)				
15:40	**16:00**	Investigating the relationship between CAD model complexity and performance trade-offs for fusion neutronics	Raska Soemantoro	University of Manchester
16:00	**16:20**	Implicit Stochastic Uncertainty Propagation Scheme for Two-Step Monte Carlo Simulations for Computational Neutronics Codes	Isabel López	UNED
16:20	**16:40**	Remarks on beryllium nuclear data for fusion reactors	Saerom Kwon	QST-Rokkasho
16:40	**17:00**	Application of the TUD-W Benchmark for Nuclear Data and code Validation	Marta Campos	F4E
17:00	**?**	**Panel session: Open discussion on fusion neutronics**		

Day 3 – Wednesday 9 – "Salón de actos – Facultad de Educación"

S1: Marco Fabbri (F4E)				
09:00	**09:20**	Simulation Activities for the Calibration of ITER Neutron Diagnostics	Giovanni Mariano	ITER IO
09:20	**09:40**	SPARC neutron diagnostics: from design to calibration and fusion power measurements	Prasoon Raj	CFS
09:40	**10:00**	Nuclear Analyses supporting the ITER Radial Neutron Camera design development	Fabio Moro	ENEA
10:00	**10:20**	High-Resolution Neutron Spectrometer for ITER tokamak – design optimization using numerical methods	Jan Dankowski	IFJ PAN
10:20	**10:40**	Development of the OpenMC workflow for ITER DNFM neutronics assessment	Egor Afanasenko	ITER-RF
10:40	**11:00**	Signal-to-background ratio calculations for ITER VNC	Pavel Reviakin	ITER-RF
11:00	**11:20**	**Coffee Break**		
S2: Arkady Serikov (KIT)				
11:20	**11:40**	Investigation of high-energy background in gamma-ray measurements for fusion power determination in DT plasmas	Stefano Colombi	University of Milano-Bicocca
11:40	**12:00**	Simulation of radiation backgrounds for the south pole neutron time-of-flight detector at the National Ignition Facility	Hesham Y. Khater	LLNL
12:00	**12:20**	Updates on nuclear analyses for ITER Diagnostics Equatorial Ports	Davide Flammini	ENEA
12:20	**12:40**	ITER Equatorial Port 9 Neutronics Analysis	Kara Godsey	ORNL
12:40	**13:00**	Nuclear analysis of the IFMIF-DONES commissioning and start-up phases	Víctor López	UNED
13:00	**14:00**	**Lunch**		
S3: Yuefeng Qiu (KIT)				
14:00	**14:20**	Neutronic modeling and nuclear analyses for the DONES neutron source needs at IFJ PAN	Urszula Wiącek	IFJ PAN
14:20	**14:40**	Relevance of the IFMIF-DONES neutron source to irradiation parameters of the EU DEMO breeding blanket	Arkady Serikov	KIT
14:40	**15:00**	Neutron Flux in IFMIF-DONES operations rooms: a comparison between Monte-Carlo and Deterministic code predictions	Ezequiel Goldberg	BSC
15:00	**15:20**	Breeding Blanket Neutronic Optimization for HELIAS reactor based on the Dual Coolant Lithium Lead concept	David Sosa	CIEMAT
15:20	**15:40**	**Coffee Break**		
S4: Alex Valentine (UKAEA)				
15:40	**16:00**	Simulations of the neutron field for streaming analyses in DT operations at JET	Igor Lengar	JSI
16:00	**16:20**	Uncertainty quantification and recent inboard studies in STEP	Lee J. Evitts	UKAEA
16:20	**16:40**	Neutronics Design of a Breeder Blanket for a Spherical Tokamak Fusion Pilot Plant	Jonathan Naish	Tokamak Energy
16:40	**17:00**	Layered Shielding Solutions for Spherical Tokamak Designs	Mayank Rajput	Tokamak Energy
17:00	**17:15**	Automating neutronics and coupled multi-physics simulation for stellarator fusion pilot plants	R. Michael Churchill	PPPL

Day 4 – Thursday 10 – "Salón de actos – Facultad de Educación"

S1: Subhash Puthanveetil (ITER IO)				
09:00	**09:20**	Commissioning of the KATANA Water Activation Loop at JSI TRIGA reactor: dose field measurements	Domen Kotnik	JSI
09:20	**09:40**	Neutron-Based Characterization of the KATANA Activation Loop Using JSI TRIGA Reactor Pulsed Operation	Julijan Peric	JSI
09:40	**10:00**	Monte Carlo simulation for optimization of a neutron spectrometer based on GEM detector	Urszula Wiącek	IFJ PAN
10:00	**10:15**	Shutdown dose rate evaluation for the beam dump in the Linear IFMIF Prototype Accelerator (LIPAc) with Direct 1 Step MCNP	Kohki Kumagai	QST-Rokkasho
10:15	**10:30**	IFMIF-DONES related activities at Lithuanian Energy Institute	Andrius Tidikas	LEI
10:30	**10:45**	FISPACT calculations for the development of a neutron activation system for STUMM	Anna Wójcik-Gargula	IFJ PAN
10:45	**11:05**	Development and management of reference IFMIF-DONES neutronics document: Nuclear Analysis Handbook	Juan García	CIEMAT
11:05	**11:25**	**Coffee Break**		
S2: Arkady Serikov (KIT)				
11:25	**11:40**	Overview of the Neutronics Calculations for EU DEMO at Lithuanian Energy Insitute	Simona Breidokaite	LEI
11:40	**11:55**	Activation analysis on the DEMO divertor materials: study of the impact of chemical composition and operational scenario	Michele Lungaroni	ENEA
11:55	**12:15**	Shutdown Dose Rate Assessments due to Water Contamination in EU-DEMO Primary Heat Transport Systems	Simone Noce	ENEA
12:15	**12:30**	Photoneutron activation of the primary cooling circuit of the Hylife-II reactor	Francisco Ogando	UNED
12:30	**12:45**	Neutronic benchmark and validation experiments at the Frascati Neutron Generator	Nicola Fonnesu	ENEA
12:45	**13:00**	Application of OpenMC for nuclear analysis at fusion facilities	Roman Afanasenko	KIT
13:00	**14:00**	**Lunch**		
S3: Michael Loughlin (ORNL)				
14:00	**14:15**	Point-kernel-based 3D ray tracing gamma dose rate calculator	Gábor Náfrádi	ITER IO
14:15	**14:30**	Speeding up complex MCNP simulations using neural network source biasing	Elena Martínez-Fernández	UNED
14:30	**14:50**	Study of the D1SUNED transport subroutines for future optimizations in benefit of ITER nuclear analyses	Pol Guijosa	UNED
14:50	**15:10**	**Coffee Break**		
S4: Michael Loughlin (ORNL)				
15:10	**15:25**	JSIR2S code system overview	Ylenia Kogovšek Žiber	JSI
15:25	**15:45**	Supply and demand of tungsten in a fleet of fusion power plants	Gabriel C. Blackett	Oxford Sigma
15:45	**16:05**	**Closing session: Subhash Puthanveetil + Michael Loughlin**		

Day 4 – Thursday 10 – Workshops – “Salón de actos – Facultad de Psicología”

09:00	**11:00**	GEOUNED	Patrick Sauvan	UNED
11:00	**11:30**	**Coffee Break**		
11:30	**13:00**	F4Enix	Alberto Bittesnich	F4E
13:00	**14:00**	**Lunch**		
14:00	**15:20**	RadModeling	Álvaro Cubí	F4E