



# 4th IAEA Technical Meeting on Fusion Data Processing, Validation and Analysis

## Wednesday, 1 December 2021

### Wednesday 1 Dec: Real time prediction of off-normal events, with particular attention to disruption and predictive maintenance; (Chaired by A. Murari) (12:00 - 14:15)

time	[id] title	presenter
12:00	[4] OPEN WORLD LEARNING: A NEW PARADIGM FOR DISRUPTION PREDICTION	GELFUSA, Michela
12:25	[3] Adaptive and transfer learning for disruption classification and prevention on ASDEX-Upgrade and JET	ROSSI, Riccardo
12:40	[16] REAL-TIME INFERENCING AND CONTROL FOR FAST PLASMA DYNAMICS WITH BEAM EMISSION SPECTROSCOPY AT DIII-D	SMITH, David
12:55	[35] PERFORMANCE ANALYSIS OF THE CENTROID METHOD PREDICTOR IN THE JET REAL TIME NETWORK	Mr GADARIYA, Dhaval
13:10	[61] COMPARISON OF UNSUPERVISED METHODS TO DETERMINE COMMON PATTERNS IN THE TERMINATION PHASE OF DISRUPTIVE DISCHARGES IN JET	Prof. VEGA, Jesús
13:25	[12] REAL-TIME DISRUPTION PREDICTION IN THE PLASMA CONTROL SYSTEM OF HL-2A BASED ON DEEP LEARNING	YANG, Zongyu
13:35	[20] Predicting locked-mode disruptions with explainable deep learning on MHD spectrograms	FERREIRA, Diogo R.
13:55	[66] DISRUPTION PREDICTION BASED ON PHYSICAL FEATURE EXTRACTION IN J-TEXT AND EAST	SHEN, Chengshuo

### Wednesday 1 Dec: Image Processing; (Chaired by J. Stillerman) (14:15 - 15:10)

time	[id] title	presenter
14:15	[8] Toward Automatic Wall Protection of Magnetic Fusion Reactors based on Infrared Monitoring	MITTEAU, Raphael
14:40	[9] Deep Learning and Image Processing for the Automated Analysis of Thermal Events on the First Wall and Divertor of Fusion Reactors	GRELIER, Erwan
14:55	[80] SPATIO-TEMPORAL DETECTION AND TRACKING OF THERMAL EVENTS ON THE PLASMA FACING COMPONENTS OF WENDELSTEIN 7-X	PUIG SITJES, Aleix

### Wednesday 1 Dec: Deep Learning; (Chaired by P. Rodriguez-Fernandez) (15:10 - 16:50)

time	[id] title	presenter
15:10	[79] EMPIRICAL MODELING OF KINETIC PROFILE SHAPES USING NEURAL NETWORKS	BOYER, Mark
15:35	[36] PLASMA CONFINEMENT MODE CLASSIFICATION USING A SEQUENCE-TO-SEQUENCE NEURAL NETWORK WITH ATTENTION	Mr MATOS, Francisco

15:50	[77] Reduced transport model development informed by machine learning tools	NEISER, Tom F.
16:05	[22] Data Forecasting of Gyro-Landau Extended Fluid Code Using Neural Networks	Mr WANG, Lian
16:20	[27] Machine learning models for real-time inference of plasma dynamics using the 2-dimensional beam emission spectroscopy system at DIII-D	MALHOTRA, Lakshya
16:30	[64] DISRUPTION PREDICTION WITH DEEP HYBRID NEURAL NETWORK FEATURE EXTRACTOR DESIGNED SPECIFIC FOR TOKAMAK ON J-TEXT	XUE, Fengming
16:40	[65] Scalable Bayesian inference with model based machine learning	PAVONE, Andrea