

# Michela Gelfusa

## List of Publications by Year in descending order

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Version: 2024-02-01

129  
papers

1,202  
citations

430442

18  
h-index

580395

25  
g-index

131  
all docs

131  
docs citations

131  
times ranked

697  
citing authors

#	ARTICLE	IF	CITATIONS
1	Overview of the JET results. Nuclear Fusion, 2015, 55, 104001.	1.6	50
2	Adaptive predictors based on probabilistic SVM for real time disruption mitigation on JET. Nuclear Fusion, 2018, 58, 056002.	1.6	44
3	Clustering based on the geodesic distance on Gaussian manifolds for the automatic classification of disruptions. Nuclear Fusion, 2013, 53, 033006.	1.6	40
4	Overview of JET results. Nuclear Fusion, 2003, 43, 1540-1554.	1.6	38
5	Application of a CO2 dial system for infrared detection of forest fire and reduction of false alarm. Applied Physics B: Lasers and Optics, 2007, 87, 373-378.	1.1	27
6	Analysis of Faraday rotation in JET polarimetric measurements. Plasma Physics and Controlled Fusion, 2011, 53, 035001.	0.9	27
7	Adaptive learning for disruption prediction in non-stationary conditions. Nuclear Fusion, 2019, 59, 086037.	1.6	27
8	Maximum likelihood bolometric tomography for the determination of the uncertainties in the radiation emission on JET TOKAMAK. Review of Scientific Instruments, 2018, 89, 053504.	0.6	25
9	Disruption prediction with artificial intelligence techniques in tokamak plasmas. Nature Physics, 2022, 18, 741-750.	6.5	25
10	On the transfer of adaptive predictors between different devices for both mitigation and prevention of disruptions. Nuclear Fusion, 2020, 60, 056003.	1.6	24
11	A statistical methodology to derive the scaling law for the H-mode power threshold using a large multi-machine database. Nuclear Fusion, 2012, 52, 063016.	1.6	23
12	A new approach to the formulation and validation of scaling expressions for plasma confinement in tokamaks. Nuclear Fusion, 2015, 55, 073009.	1.6	23
13	Application of symbolic regression to the derivation of scaling laws for tokamak energy confinement time in terms of dimensionless quantities. Nuclear Fusion, 2016, 56, 026005.	1.6	23
14	Recent developments of the JET far-infrared interferometer-polarimeter diagnostic. Review of Scientific Instruments, 2010, 81, 10D538.	0.6	22
15	Advanced pulse shape discrimination via machine learning for applications in thermonuclear fusion. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 974, 164198.	0.7	22
16	Mutual interaction of Faraday rotation and Cotton-Mouton phase shift in JET polarimetric measurements. Review of Scientific Instruments, 2010, 81, 10D533.	0.6	20
17	Symbolic regression via genetic programming for data driven derivation of confinement scaling laws without any assumption on their mathematical form. Plasma Physics and Controlled Fusion, 2015, 57, 014008.	0.9	20
18	First Experimental Campaign to Demonstrate STARDUST-Upgrade Facility Diagnostics Capability to Investigate LOVA Conditions. Journal of Fusion Energy, 2015, 34, 1320-1330.	0.5	19

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19	Reduction of false alarms in forest fire surveillance using water vapour concentration measurements. Optics and Laser Technology, 2009, 41, 374-379.	2.2	18
20	Non-power law scaling for access to the H-mode in tokamaks via symbolic regression. Nuclear Fusion, 2013, 53, 043001.	1.6	18
21	Numerical study of air jet flow field during a loss of vacuum. Fusion Engineering and Design, 2014, 89, 2048-2052.	1.0	18
22	Application of transfer entropy to causality detection and synchronization experiments in tokamaks. Nuclear Fusion, 2016, 56, 026006.	1.6	18
23	UMEL: A new regression tool to identify measurement peaks in LIDAR/DIAL systems for environmental physics applications. Review of Scientific Instruments, 2014, 85, 063112.	0.6	17
24	Upgrading Model Selection Criteria with Goodness of Fit Tests for Practical Applications. Entropy, 2020, 22, 447.	1.1	17
25	Extensive statistical analysis of ELMs on JET with a carbon wall. Plasma Physics and Controlled Fusion, 2014, 56, 114007.	0.9	16
26	Dust tracking techniques applied to the STARDUST facility: First results. Fusion Engineering and Design, 2014, 89, 2098-2102.	1.0	16
27	First 3D numerical simulations validated with experimental measurements during a LOVA reproduction inside the new facility STARDUST-Upgrade. Fusion Engineering and Design, 2015, 101, 204-208.	1.0	16
28	Real-time vehicle emissions monitoring using a compact LiDAR system and conventional instruments: first results of an experimental campaign in a suburban area in southern Italy. Optical Engineering, 2016, 55, 103107.	0.5	16
29	Stacking of predictors for the automatic classification of disruption types to optimize the control logic. Nuclear Fusion, 2021, 61, 036027.	1.6	16
30	A new calibration code for the JET polarimeter. Review of Scientific Instruments, 2010, 81, 053507.	0.6	14
31	A statistical method for model extraction and model selection applied to the temperature scaling of the $\text{L}\alpha\text{-H}$ transition. Plasma Physics and Controlled Fusion, 2014, 56, 114001.	0.9	14
32	How to assess the efficiency of synchronization experiments in tokamaks. Nuclear Fusion, 2016, 56, 076008.	1.6	14
33	On the Use of Transfer Entropy to Investigate the Time Horizon of Causal Influences between Signals. Entropy, 2018, 20, 627.	1.1	14
34	In-cell measurements of smoke backscattering coefficients using a $\text{CO}_2$ laser system for application to lidar-dial forest fire detection. Optical Engineering, 2010, 49, 124302.	0.5	13
35	Investigating the thermal stability of highly radiative discharges on JET with a new tomographic method. Nuclear Fusion, 2020, 60, 046030.	1.6	13
36	Gyrokinetic modeling of impurity peaking in JET H-mode plasmas. Physics of Plasmas, 2017, 24, .	0.7	13

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37	An alternative approach to the determination of scaling law expressions for the Lâ€™H transition in Tokamaks utilizing classification tools instead of regression. Plasma Physics and Controlled Fusion, 2014, 56, 114002.	0.9	12
38	Safety Analysis in Large Volume Vacuum Systems Like Tokamak: Experiments and Numerical Simulation to Analyze Vacuum Ruptures Consequences. Advances in Materials Science and Engineering, 2014, 2014, 1-29.	1.0	12
39	Simulations and Experiments to Reach Numerical Multiphase Informations for Security Analysis on Large Volume Vacuum Systems Like Tokamaks. Journal of Fusion Energy, 2015, 34, 959-978.	0.5	12
40	A comprehensive study of the uncertainties in bolometric tomography on JET using the maximum likelihood method. Review of Scientific Instruments, 2019, 90, 123502.	0.6	12
41	Investigating the Physics of Tokamak Global Stability with Interpretable Machine Learning Tools. Applied Sciences (Switzerland), 2020, 10, 6683.	1.3	12
42	Numerical Simulations as Tool to Predict Chemical and Radiological Hazardous Diffusion in Case of Nonconventional Events. Modelling and Simulation in Engineering, 2016, 2016, 1-11.	0.4	11
43	Multiwavelength differential absorption lidar to improve measurement accuracy: test with ammonia over a traffic area. Applied Physics B: Lasers and Optics, 2018, 124, 1.	1.1	11
44	Residual analysis of the equilibrium reconstruction quality on JET. Nuclear Fusion, 2011, 51, 053012.	1.6	10
45	Detection and monitoring of pollutant sources with Lidar/Dial techniques. Journal of Physics: Conference Series, 2015, 658, 012004.	0.3	10
46	Design of a new experimental facility to reproduce LOVA and LOCA consequences on dust resuspension. Fusion Engineering and Design, 2015, 98-99, 2191-2195.	1.0	10
47	Robust scaling laws for energy confinement time, including radiated fraction, in Tokamaks. Nuclear Fusion, 2017, 57, 126017.	1.6	10
48	On efficiency and interpretation of sawteeth pacing with on-axis ICRH modulation in JET. Nuclear Fusion, 2017, 57, 126057.	1.6	10
49	Soft x-ray generation by a tabletop Nd:YAG/glass laser system. Journal of Physics Condensed Matter, 2006, 18, S2039-S2044.	0.7	9
50	Influence of plasma diagnostics and constraints on the quality of equilibrium reconstructions on Joint European Torus. Review of Scientific Instruments, 2013, 84, 103508.	0.6	9
51	Causality Detection Methods Applied to the Investigation of Malaria Epidemics. Entropy, 2019, 21, 784.	1.1	9
52	Exploratory Data Analysis Techniques to Determine the Dimensionality of Complex Nonlinear Phenomena: The L-to-H Transition at JET as a Case Study. IEEE Transactions on Plasma Science, 2012, 40, 1386-1394.	0.6	8
53	Design and development of a compact lidar/DIAL system for aerial surveillance of urban areas. , 2013, , .		8
54	Image computing techniques to extrapolate data for dust tracking in case of an experimental accident simulation in a nuclear fusion plant. Review of Scientific Instruments, 2016, 87, 013504.	0.6	8

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55	Lidar and Dial application for detection and identification: a proposal to improve safety and security. Journal of Instrumentation, 2017, 12, C01054-C01054.	0.5	8
56	Improving Entropy Estimates of Complex Network Topology for the Characterization of Coupling in Dynamical Systems. Entropy, 2018, 20, 891.	1.1	8
57	On the effects of missing chords and systematic errors on a new tomographic method for JET bolometry. Fusion Engineering and Design, 2019, 146, 2124-2129.	1.0	8
58	A Model Falsification Approach to Learning in Non-Stationary Environments for Experimental Design. Scientific Reports, 2019, 9, 17880.	1.6	8
59	Early detection of small forest fire by dial technique. , 2005, , .		7
60	Raman water vapour concentration measurements for reduction of false alarms in forest fire detection. Proceedings of SPIE, 2009, , .	0.8	7
61	A statistical investigation of the effects of edge localized modes on the equilibrium reconstruction in JET. Plasma Physics and Controlled Fusion, 2012, 54, 105005.	0.9	7
62	Development of a rapid method for the automatic classification of biological agents' fluorescence spectral signatures. Optical Engineering, 2015, 54, 114105.	0.5	7
63	Detection of Causal Relations in Time Series Affected by Noise in Tokamaks Using Geodesic Distance on Gaussian Manifolds. Entropy, 2017, 19, 569.	1.1	7
64	How to Handle Error Bars in Symbolic Regression for Data Mining in Scientific Applications. Lecture Notes in Computer Science, 2015, , 347-355.	1.0	7
65	Validation of Joint European Torus polarimetric measurements with residual analysis. Measurement Science and Technology, 2010, 21, 115704.	1.4	6
66	Shadowgraph Technique Applied to STARDUST Facility for Dust Tracking: First Results. Physics Procedia, 2015, 62, 97-101.	1.2	6
67	Data driven theory for knowledge discovery in the exact sciences with applications to thermonuclear fusion. Scientific Reports, 2020, 10, 19858.	1.6	6
68	A maximum likelihood tomographic method applied to JET gamma ray emission during the current quench. Fusion Engineering and Design, 2021, 168, 112637.	1.0	6
69	Dealing with artefacts in JET iterative bolometric tomography using masks. Plasma Physics and Controlled Fusion, 2022, 64, 045013.	0.9	6
70	Preliminary results of a lidar-dial integrated system for the automatic detection of atmospheric pollutants. Proceedings of SPIE, 2012, , .	0.8	5
71	Analysis of JET Polarimeter With a Propagation Code Based on the Stokes Formalism. IEEE Transactions on Plasma Science, 2013, 41, 1575-1586.	0.6	5
72	A systemic approach to classification for knowledge discovery with applications to the identification of boundary equations in complex systems. Artificial Intelligence Review, 2022, 55, 255-289.	9.7	5

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73	STARDUST-U experiments on fluid-dynamic conditions affecting dust mobilization during LOVAs. Journal of Instrumentation, 2016, 11, C07012-C07012.	0.5	5
74	Development of robust indicators for the identification of electron temperature profile anomalies and application to JET. Plasma Physics and Controlled Fusion, 2022, 64, 045002.	0.9	5
75	Evolution study of smoke backscattering coefficients in a cell by means of a compact mobile Nd:YAG lidar system. Proceedings of SPIE, 2007, , .	0.8	4
76	Planetary boundary layer (PBL) monitoring by means of two laser radar systems: experimental results and comparison. , 2010, , .		4
77	First open field measurements with a portable CO <sub>2</sub> lidar/dial system for early forest fires detection. Proceedings of SPIE, 2011, , .	0.8	4
78	New Approximations and Calibration Methods to Provide Routine Real-Time Polarimetry on JET. IEEE Transactions on Plasma Science, 2012, 40, 1149-1161.	0.6	4
79	Preliminary investigation of the use of visible images to validate the magnetic reconstruction of the boundary on JET. Fusion Engineering and Design, 2013, 88, 1293-1296.	1.0	4
80	Automatic localization of backscattering events due to particulate in urban areas. Proceedings of SPIE, 2014, , .	0.8	4
81	A Statistical Analysis of the Scaling Laws for the Confinement Time Distinguishing between Core and Edge. Physics Procedia, 2015, 62, 113-117.	1.2	4
82	Determining the prediction limits of models and classifiers with applications for disruption prediction in JET. Nuclear Fusion, 2017, 57, 016024.	1.6	4
83	Alternative Detection of n = 1 Modes Slowing Down on ASDEX Upgrade. Applied Sciences (Switzerland), 2020, 10, 7891.	1.3	4
84	Adaptive Quasi-Unsupervised Detection of Smoke Plume by LiDAR. Sensors, 2020, 20, 6602.	2.1	4
85	Image-Based Methods to Investigate Synchronization between Time Series Relevant for Plasma Fusion Diagnostics. Entropy, 2020, 22, 775.	1.1	4
86	First measurements of line-integrated electron density in an ITER-like configuration using the JET far infrared polarimeter diagnostic. Plasma Physics and Controlled Fusion, 2021, 63, 045008.	0.9	4
87	Statistical analysis of plasma shape influence on the power threshold to access the H-mode. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 720, 88-91.	0.7	3
88	Effects of the input polarization on JET polarimeter horizontal channels. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 720, 131-134.	0.7	3
89	Fluorescence measurements for the identification of biological agents features for the construction of a spectra database. , 2014, , .		3
90	First attempts at measuring widespread smoke with a mobile lidar system. , 2015, , .		3

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91	Advanced methods for image registration applied to JET videos. Fusion Engineering and Design, 2015, 96-97, 765-768.	1.0	3
92	A support vector machine approach to the automatic identification of fluorescence spectra emitted by biological agents. , 2016, , .		3
93	Scaling laws of the energy confinement time in stellarators without renormalization factors. Nuclear Fusion, 2021, 61, 096036.	1.6	3
94	Quantifying Total Influence between Variables with Information Theoretic and Machine Learning Techniques. Entropy, 2020, 22, 141.	1.1	3
95	Database for chemical weapons detection: first results. , 2008, , .		2
96	Validation of Magnetic Reconstruction Codes for Real-Time Applications. Fusion Science and Technology, 2010, 58, 742-754.	0.6	2
97	Latest developments in image processing for the next generation of devices with a view on DEMO. Fusion Engineering and Design, 2012, 87, 2116-2119.	1.0	2
98	A new class of indicators for the model selection of scaling laws in nuclear fusion. Fusion Engineering and Design, 2013, 88, 738-741.	1.0	2
99	Overview of image processing tools to extract physical information from JET videos. Plasma Physics and Controlled Fusion, 2014, 56, 114006.	0.9	2
100	Improved equilibrium reconstructions by advanced statistical weighting of the internal magnetic measurements. Review of Scientific Instruments, 2014, 85, 123507.	0.6	2
101	Advanced signal processing based on support vector regression for lidar applications. , 2015, , .		2
102	A Novel Facility to Investigate Dust Mobilization in Confined Environments with Applications to the Security of the Pharmaceutical Industry. Materials Science Forum, 2016, 879, 1213-1219.	0.3	2
103	Mini-DIAL system measurements coupled with multivariate data analysis to identify TIC and TIM simulants: preliminary absorption database analysis.. Journal of Physics: Conference Series, 2017, 778, 012004.	0.3	2
104	Geodesic Distance on Gaussian Manifolds to Reduce the Statistical Errors in the Investigation of Complex Systems. Complexity, 2019, 2019, 1-24.	0.9	2
105	On the optimal mix of renewable energy sources, electrical energy storage and thermoelectric generation for the de-carbonization of the Italian electrical system. European Physical Journal Plus, 2020, 135, 1.	1.2	2
106	Considerations on Stellarator's Optimization from the Perspective of the Energy Confinement Time Scaling Laws. Applied Sciences (Switzerland), 2022, 12, 2862.	1.3	2
107	An Unsupervised Spectrogram Cross-Correlation Method to Assess ELM Triggering Efficiency by Pellets. Applied Sciences (Switzerland), 2022, 12, 3681.	1.3	2
108	Water vapour emission in vegetable fuel: absorption cell measurements and detection limits of our CO <sub>2</sub> Dial system. , 2006, , .		1

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109	Modelling of the signal processing electronics of JET interferometer-polarimeter. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2010, 623, 660-663.	0.7	1
110	On the Potential of Information Theoretic Indicators for the Detection of Image Vibrations and for Image Registration on JET. IEEE Transactions on Plasma Science, 2013, 41, 3030-3042.	0.6	1
111	Towards the implementation of a spectral database for the detection of biological warfare agents. Proceedings of SPIE, 2014, , .	0.8	1
112	New analysis methods to push the boundaries of diagnostic techniques in the environmental sciences. Journal of Instrumentation, 2016, 11, C04019-C04019.	0.5	1
113	A Metric to Improve the Robustness of Conformal Predictors in the Presence of Error Bars. Lecture Notes in Computer Science, 2016, , 105-115.	1.0	1
114	Stray millimeter-wave radiation loads on ITER fused silica windows. Fusion Engineering and Design, 2019, 146, 308-311.	1.0	1
115	Testing the consistency of multimachine databases for physical studies of regression. Nuclear Fusion, 2020, 60, 015001.	1.6	1
116	Improved Treatment of the Independent Variables for the Deployment of Model Selection Criteria in the Analysis of Complex Systems. Entropy, 2021, 23, 1202.	1.1	1
117	On determining the prediction limits of mathematical models for time series. Journal of Instrumentation, 2016, 11, C07013-C07013.	0.5	1
118	Surgical treatment of cerebral ischemia by means of diode laser: first experimental results and comparison with theoretical model. , 2007, , .		0
119	Image Manipulation for High Temperature Plasmas. Contributions To Plasma Physics, 2011, 51, 187-193.	0.5	0
120	Preliminary investigations of equilibrium reconstruction quality during ELMy and ELM-free phases on JET. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 720, 128-130.	0.7	0
121	Detection of pollutant sources in the atmosphere with Lidar/Dial techniques: Results of an experimental campaign in the south of Italy. , 2014, , .		0
122	Multispectral analysis of biological agents to implement a quick tool for stand-off biological detection. , 2015, , .		0
123	3D numerical simulations of a LOVA reproduction inside the new facility STARDUST-UPGRADE. Journal of Instrumentation, 2017, 12, C02001-C02001.	0.5	0
124	Experimental Real-Time Tracking and Numerical Simulation of Hazardous Dust Dispersion in the Atmosphere. , 2018, , 41-48.		0
125	Quantifying Total Influence between Variables with Information Theoretic and Machine Learning Techniques. Proceedings (mdpi), 2020, 46, 19.	0.2	0
126	The Reciprocal Influence Criterion: An Upgrade of the Information Quality Ratio. Complexity, 2021, 2021, 1-14.	0.9	0



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127	Frontiers in data analysis methods: from causality detection to data driven experimental design. Plasma Physics and Controlled Fusion, 0, , .	0.9	0
128	Conditional Recurrence Plots for the investigation of sawteeth pacing with RF modulaton. Plasma Physics and Controlled Fusion, 0, , .	0.9	0
129	Proposal of a testing procedure to qualify ITER window assemblies and absorbing coatings exposed to high microwave stray radiation. Fusion Engineering and Design, 2022, 181, 113209.	1.0	0