ADRIANO MELE

Researcher in Automation, Control and Nuclear Fusion technologies

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https://www.youtube.com/c/adrianom

https://github.com/AdrianoMele/

EXPERIENCE

2023 today	**Research Topic Coordinator – WPTE RT22-04** *EUROfusion* Research Topic Coordinator in the Tokamak Exploitation Workpackage for the Research Topic RT22 04: Physics-based machine generic systems for an integrated control of plasma discharge
2021 today	**Assistant professor** (RTDA - ING-INF/04) *Università degli Studi della Tuscia,* Viterbo Automation and control
2019 2021	**Researcher** *CREATE,* Napoli Plasma diagnostic and control systems in tokamaks
2016 2018	**In-house scientific consultant** *CREATE,* Napoli Modelling and control of tokamak plasmas

EDUCATION

2020	**License to practice the professional activity of industrial engineer (Abilitazione all'esercizio della professione di Ingegnere Industriale)** *Università degli Studi di Napoli Federico II* • **Grade**: 09/10
2019	**PhD in Fusion Science and Engineering** *Università degli Studi di Padova, Università degli Studi di Napoli Federico II* • **Grade**: excellent • **Thesis**: A flexible architecture for plasma magnetic control in tokamak reactors *(available at http://paduaresearch.cab.unipd.it/11893/)*
2015	**M.Sc. in Automation Engineering** *Università degli Studi di Napoli Federico II* • **Grade**: 110/110 e lode • **Thesis**: Controllo di corrente e forma per il plasma del tokamak EAST *(Plasma current and shape control for the EAST tokamak)*
2013	**B.Sc. in Automation Engineering** *Università degli Studi di Napoli Federico II* • **Grade**: 110/110 e lode • **Thesis**: Taratura di un regolatore PID mediante formule di inversione e realizzazione di una piattaforma mobile equipaggiata con ruote omnidirezionali Mecanum *(PID tuning with inversion formulae and realization of a mobile rover equipped with omnidirectional Mecanum wheels)*

LANGUAGES

Italian	**Native**
English	**European CEFR level C2**
Spanish	Basic understanding

GRANTS

2022	**YIRG22 – SOLEMIO** Co-proposer of a project for the development of a code to model heat flux deposition in tokamaks, in collaboration with the Princeton Plasma Physics Laboratory, funded for 20.000€.
2019 2022	**EUROFUSION ENGINEERING GRANT 2019/14: DEVELOPMENT OF DIAGNOSTICS ADAPTABLE TO ALL DTT DIVERTOR OPTIONS** Winner of a 3-years Eurofusion Engineering Grant for the development of diagnostics for the DTT device, funded for 255.000€. The activities related to the grant have been carried our at the CREATE consortium, in collaboration with the Institute for Plasma Physics della Chinese Academy of Sciences (ASIPP, Hefei, China) and the Swiss Plasma Center of the École polytechnique fédérale de Lausanne (SPC-EPFL, Lausanne, Switzerland).

PARTICIPATION IN PROJECTS AND WORKPACKAGES

2023 today	**Eurofusion WPTE (Tokamak Exploitation)** Participation in control experiments and breakdown optimization activities for the TCV and MAST-U tokamaks.
2022 2023	**DTT Proposal for Services – Plasma control system** Assignee of a pre-conceptual study for the DTT detachment control system.
2022	**YIRG22 – SOLEMIO** Collaboration in the development of a code to model power deposition in tokamaks.
2017	**F4E OPE700** Development of a Graphic User Interface for the CREATE-L/NL codes, installed and tested at the ITER Remote Experimentation Center in Rokkasho, Japan.
2020 2021	**F4E OPE883** (Development and the supply of magnetic diagnostic software for ITER) • Responsible of the WP 4.17 on the development of a streming equilibrium reconstruction code • Member of WP 4.12 on the development of an observer for the induced passive currents The activity was carried out in collaboration with the teams of ASIPP-Hefei (main developers of the P-EFIT code) and EPFL-SPC-Lausanne (main developers of the LIUQE code). Main achievements of the project: • adaptation the two reconstruction codes to the ITER geometry • development of a Matlab/XML interface to configure the two codes, interface them with synthetic magnetic data and run them in a user-friendly manner • validation of the reconstruction algorithms based on synthetic pulse data generated with the CREATE modelling tools • development and testing of drift compensation methods • development of a Kalman filter for the observation of the induced eddy currents News: https://fusionforenergy.europa.eu/news/experts-design-software-modules-to-operate-iter/

2017 2021	**Eurofusion WPSA (JT60-SA)** Exploitation of the modelling and simulation tools developed at the CREATE consortium for the JT-60SA tokamak activities. Initial activities were carried out in collaboration with the Instituto Superior Técnico (Lisbon), and were devoted to the design of a full magnetic control system for JT-60SA: • magnetic control architecture designed and tested in simulation • interface with the *Cauchy Condition Surface* reconstruction algorithm developed by the National Institute for Quantum and Radiological Science and Technology (QST - Japan) • investigation of the possibility of using in-vessel kicks for ELM pacing in terms of feasibility from the point of view of the vertical stabilization controller • study of the impact of different gap choices on the shape control performance In 2019, an updated version of the CREATE-EGENE software, originally developed under the F4E OPE700 contract, was included in a project for the development of a discharge simulator for JT-60SA, in collaboration with CEA Cadarache. The code is available at: https://iterphysicswiki.euro-fusion.org/index.php?title=JT-60SA_simulator_development_page (Eurofusion access credentials needed). Nominated member of the 2020-2021 WPSA EU expert team for the JT-60SA Integrated Commissioning (plasma control and equilibrium reconstruction).
2016 2019	**Eurofusion WP-ADC (Advanced Divertor Configurations)** Participation in the EAST tokamak experiments. The main objective was to develop a flexible magnetic control architecture capable of enabling the feedback control of alternative magnetic configurations. Main steps of the project: • design and validation of a novel Vertical Stabilization system (ASIPP website: http://english.ipp.cas.cn/news/201612/t20161216_172501.html ITER news: http://www.iter.org/of-interest/683) • development of a Multi-Input-Multi-Output control system for the Poloidal Field Coils currents • update of the PFC-MIMO current controller ad development of a MIMO isoflux shape controller • tests on the feedback control of additional null points • test of the MIMO shape controller with different plasma configurations and with additional heating; proposal of an alternative gap control scheme Recently, a Reinforcement Learning based controller for the Vertical Stabilization has also been proposed for EAST.

COLLABORATIONS

2019 2023	**Visiting researcher** (approx. 5 months total) *EPFL-SPC, Lausanne, Switzerland* • Collaboration under the F4E OPE883 contract (6 months foreseen, shortened due to the COVID 19 pandemic) • Development of novel magnetic control algorithms for TCV • Coordination of WPTE-RT22-04 experiments
2023	**Visiting researcher** *Lehigh University, Pennsylvania, US*
2022	**Visiting researcher** *Princeton Plasma Physics Laboratory, New Jersey, USA*
2016 2019	**Visiting researcher** (approx. 2.5 months total) *ASIPP, Hefei, China* • Development of a flexible magnetic control system under the EUROfusion WorkPackage on Alternative Divertor Configurations
2019	**Visiting researcher** *CEA, Cadarache, France* • Collaboration on Eurofusion WPSA modelling activities
2017	**Visiting researcher** *ITER-REC, Rokkasho, Japan* • Installation and testing of the CREATE modelling codes for JT-60SA and ITER under the F4E OPE700 contract

TEACHING

2021 2023	**PhD course instructor** *Università degli Studi di Padova* *Università degli Studi di Napoli Federico II* *University of Ghent (2021 only)* Instructor in the Advanced Plasma Control (AC2) of the joint doctorate in Fusion Science and Engineering **Lectures**: • Plasma axisymmetric control (4 hours, 2023) • Design plasma magnetic control - Matlab hands-on session (3 hours, 2021 and 2023) Substitute member for PhD commissions 150-2020 and 195-2020 (Ciclo/i XXXIV, 2022) in FUSION SCIENCE AND ENGINEERING
2022 2023	**Assistant professor** *Università degli Studi della Tuscia* • Automatic Control II ○ 6 ECE credits (48 hours) ○ B.Sc. in Engineering • Advanced Automation and Control ○ 9 ECE credits (72 hours) ○ M.Sc. in Mechanical Engineering • Lessons on plasma magnetic control in fusion reactors in the course in Technologies for Nuclear Fusion (prof. G. Calabrò) • Lessons in a course in Mechatronics for students of Digital Management of Mountain Environments • **Supervisor or co-supervisor** of 2 B.Sc thesis works
2019 2022	**Adjunct professor** *Università degli Studi di Napoli Federico II* Adjunct professor for the courses on ○ Tecnologie Informatiche per l'Automazione Industriale (2019/2020 and 2020/2021) *(Information Technologies for Industrial Automation)* ○ 6 ECE credits (48 hours) ○ B.Sc in Informatic Engineering • Laboratorio di Sistemi di Controllo Industriali (2021/2022) *(Industrial Control Systems Lab)* ○ 6 ECE credits (48 hours) ○ B.Sc. in Mechatronic Engineering • **Supervisor** of 9 B.Sc thesis works
2021	**Teaching contract** *Università degli studi della Tuscia* Realization of teaching materials (in English) for the course in Automatic Control ○ 12 ECE credits (24 hours, shared with eng. A. Castaldo) ○ B.Sc in Industrial Engineering

2021	**Teaching contract** *Accademia DaVinci* Online course on PLC programming (10 hours).
2016 2019	**Teaching assistant** *Università degli Studi di Napoli Federico II* Lessons in the courses on • Tecnologie dei Sistemi di Automazione e Controllo (Automation and Control Systems Technologies) (prof. G. De Tommasi): lectures on Extremum Seeking and descriptive function method, academic years from 2016/2017 to 2018/2019 • Plasmas and Nuclear Fusion (prof. R. Albanese): lectures on kinetic and fluid plasma models, academic years from 2017/2018 to 2019/2020 • Teoria dei Sistemi (Dynamical systems) (prof. A. Pironti): introductory lectures on Bode diagrams, academic years 2017/2018 and 2018/2019
2016 2018	**Tutoring** *Università degli Studi di Napoli Federico II* Support basic Maths and Physics courses in the academic years 2016/2017 (50 hours) and 2017/2018 (49 hours)

PARTICIPATION IN INTERNATIONAL CONFERENCES

CDC 2016	*Las Vegas, Nevada, USA* **Oral presentation:** New conditions for annular finite-time stability of linear systems
EPS 2018	*Praga, Czech Republic* **Poster:** Shape reconstruction and eddy currents estimation via Kalman Filter at the EAST tokamak
SOFT 2018	*Giardini Naxos, Italy* **Poster:** MIMO shape control at the EAST tokamak: Simulations and experiments
SOFT 2020	*Dubrovnik, Croatia (online due to COVID-19)* **Poster:** Preliminary evaluation of the LIUQE code reconstruction performance for the DTT device
CCTA 2020	*Montréal, Canada (online due to COVID-19)* **Oral presentation:** Model-based MIMO isoflux plasma shape control at the EAST tokamak: experimental results
SIAM CT23	*Philadelphia, Pennsylvania, USA* **Organizer** of a mini-symposium on control issues in nuclear fusion reactors
CODIT 2024	*La Valletta, Malta* **Co-organizer** of a special session on optimization and control for fusion plasmas

ACTIVITY AS EDITOR/REVIEWER

Editor	Associate Editor for the **Franklin Open** journal (since 2023)
Journals	Reviewer for journals on both control and automation (IEEE Control Systems Letters, IEEE Transactions on Control Systems Technology, IEEE Transactions on Intelligent Transportation Systems, Advances in Computational Intelligence, IEEE Transactions on Cybernetics, International Journal of Robust and Nonlinear Control, ISA Transactions) and nuclear fusion (Nuclear Fusion, Plasma Physics and Controlled Fusion, Fusion Engineering and Design, Physica Scripta, IEEE Transactions on Plasma Science)
Conferences	Reviewer for some of the most important conferences on automatic control (Conference on Decision and Control (CDC), American Control Conference (ACC), European Control Conference (ECC), Conference on Control Technology and Application (CCTA), IEEE Multi-Conference on Systems and Control (MSC), IFAC World Congress) and on nuclear fusion (Symposium On Fusion Technology (SOFT))
Projects	Reviewer for three project proposal submitted to the Office of Science of the U.S. Department of Energy
Recognitions	IOP Trusted Reviewer Certificate

PUBLICATIONS

International Journals

[J-1] “A data-driven Vertical Stabilization system for the ITER tokamak based on Dynamic Mode Decomposition”, LE di Grazia, M Mattei, **A Mele**, A Pironti, Journal of the Franklin Institute, 2024

[J-2] “Assessing the finite-time stability of nonlinear systems by means of physics-informed neural networks”, **A Mele**, A Pironti, Systems and Control Letters, 2023

[J-3] “Implementation of a high-speed multichannel data acquisition system for magnetic diagnostics and plasma centroid position control in ISTTOK”, D Corona, **A Mele**, N Cruz, H Alves, B B Carvalho, H Figueiredo, H Fernandes, IEEE Access, 2023

[J-4] "A Deep Reinforcement Learning approach for Vertical Stabilization of tokamak plasmas", S Dubbioso, G De Tommasi, **A Mele**, G Tartaglione, M Ariola, A Pironti, Fusion Engineering and Design 194 (2023): 113725

[J-5] “Vertical stabilization of tokamak plasmas via extremum seeking”, S Dubbioso, LE di Grazia, G De Tommasi, M Mattei, **A Mele**, A Pironti, IFAC Journal of Systems and Control 21, 100203, 2022

[J-6] “Implementation of a Kalman filter-based eddy current estimator for the P-EFIT magnetic equilibrium reconstruction code”, Y Huang, **A Mele**, Z Luo, M Mattei, A Pironti, B Xiao, QP Yuan, Nuclear Fusion 62 086010, 2022

[J-7] “Plasma physics and control studies planned in JT-60SA for ITER and DEMO operations and risk mitigation”, Maiko Yoshida, Gerardo Giruzzi, Nobuyuki Aiba, JF Artaud, J Ayllon-Guerola, L Balbinot, O Beeke, E Belonohy, P Bettini, W Bin, A Bierwage, T Bolzonella, M Bonotto, C Boulbe, J Buermans, M Chernyshova, S Coda, R Coelho, S Davis, C Day, G De Tommasi, M Dibon, A Ejiri, G Falchetto, A Fassina, B Faugeras, L Figini, M Fukumoto, S Futatani, K Galazka, J Garcia, M Garcia-Muñoz, L Garzotti, L Giacomelli, L Giudicotti, S Hall, N Hayashi, C Hoa, M Honda, K Hoshino, M Iafrati, A Iantchenko, S Ide, S Iio, R Imazawa, S Inoue, A Isayama, E Joffrin, K Kamiya, Y Ko, M Kobayashi, T Kobayashi, G Kocsis, A Kovacsik, T Kurki-Suonio, B Lacroix, P Lang, Ph Lauber, A Louzguiti, E De La Luna, G Marchiori, M Mattei, A Matsuyama, S Mazzi, **A Mele**, F Michel, Y Miyata, J Morales, P Moreau, A Moro, T Nakano, M Nakata, E Narita, R Neu, S Nicollet, M Nocente, S Nowak, FP Orsitto, V Ostuni, Y Ohtani, N Oyama, R Pasqualotto, B Pégourié, E Perelli, L Pigatto, C Piccinni, A Pironti, P Platania, B Ploeckl, D Ricci, P Roussel, G Rubino, R Sano, K Särkimäki, K Shinohara, S Soare, C Sozzi, S Sumida, T Suzuki, Y Suzuki, T Szabolics, T Szepesi, Y Takase, M Takech, N Tamura, K Tanaka, H Tanaka, M Tardocchi, A Terakado, H Tojo, T Tokuzawa, A Torre, N Tsujii, H Tsutsui, Y Ueda, H Urano, M Valisa, M Vallar, J Vega, F Villone, T Wakatsuki, T Wauters, M Wischmeier, S Yamoto, L Zani, Plasma Physics and Controlled Fusion 64 (5), 054004, 2022

[J-8] “A Deep Deterministic Policy Gradient Learning Approach to Missile Autopilot Design”, A Candeli, G De Tommasi, DG Lui, **A Mele**, S Santini, G Tartaglione, IEEE Access 10, 19685-19696, 2022

[J-9] “Finite-Time stabilization of linear systems with unknown control direction via Extremum Seeking”, **A Mele**, G De Tommasi, A Pironti, IEEE Transactions on Automatic Control, 2022

[J-10] “Preliminary evaluation of the LIUQE code reconstruction performance for the DTT device”, **A Mele**, R Ambrosino, F Carpanese, A Castaldo, F Felici, A Merle, JM Moret, A Pironti, Fusion Engineering and Design 167, 112326, 2021

[J-11] “GPU-optimized fast plasma equilibrium reconstruction in fine grids for real-time control and data analysis”, Y Huang, ZP Luo, BJ Xiao, LL Lao, **A Mele**, A Pironti, M Mattei, G Ambrosino, QP Yuan, YH Wang, NN Bao, Nuclear Fusion 60 (7), 076023, 2020

[J-12] “On the Numerical Solution of Differential Linear Matrix Inequalities”. M Ariola, G De Tommasi, **A Mele**, G Tartaglione, Journal of Optimization Theory and Applications 185 (2), 540-553, 2020

[J-13] “A reduced basis approach to plasma equilibrium reconstruction in tokamaks”, **A Mele**, G De Tommasi, M Mattei, A Pironti, Fusion Engineering and Design 154, 111520, 2020

[J-14] “Advances in the physics studies for the JT-60SA tokamak exploitation and research plan”, G Giruzzi, M Yoshida, N Aiba, JF Artaud, J Ayllon-Guerola, O Beeke, M Yoshida, N Aiba, JF Artaud, J Ayllon-Guerola, A Bierwage, T Bolzonella, M Bonotto, C Boulbe, M Chernyshova, S Coda, R Coelho, D Corona, N Cruz, S Davis, C Day, G De Tommasi, M Dibon, D Douai, D Farina, A Fassina, B Faugeras, L Figini, M Fukumoto, S Futatani, K Galazka, J Garcia, M Garcia-Muñoz, L Garzotti, L Giudicotti, N Hayashi, M Honda, K Hoshino, A Iantchenko, S Ide, S Inoue, A Isayama, E Joffrin, Y Kamada, K Kamiya, M Kashiwagi, H Kawashima, T Kobayashi, A Kojima, T Kurki-Suonio, P Lang, Ph Lauber, E de la Luna, G Marchiori, G Matsunaga, A Matsuyama, M Mattei, S Mazzi, **A Mele**, Y Miyata, S Moriyama, J Morales, A Moro, T Nakano, R Neu, S Nowak, FP Orsitto, V Ostuni, N Oyama, S Pamela, R Pasqualotto, B Pégourié, E Perelli, L Pigatto, C Piron, A Pironti, P Platania, B Ploeckl, D Ricci, M Romanelli, G Rubino, S Sakurai, K Särkimäki, M Scannapiego, K Shinohara, J Shiraishi, S Soare, C Sozzi, T Suzuki, Y Suzuki, T Szepesi, M Takechi, K Tanaka, H Tojo, M Turnyanskiy, H Urano, M Valisa, M Vallar, J Varje, J Vega, F Villone, T Wakatsuki, T Wauters, M Wischmeier, S Yamoto, R Zagorski, Plasma Physics and Controlled Fusion 62 (1), 01400, 2019

[J-15] “Plasma shape control assessment for JT-60SA using the CREATE tools”, D Corona, N Cruz, G De Tommasi, H Fernandes, E Joffrin, M Mattei, **A Mele**, Y Miyata, A Pironti, T Suzuki, H Urano, F Villone, Fusion Engineering and Design 146, 1773-1777, 2019

[J-16] “MIMO Shape Control at the EAST tokamak: simulations and experiments”, **A Mele**, R Albanese, R Ambrosino, A Castaldo, G De Tommasi, ZP Luo, A Pironti, QP Yuan, W Yuehang, BJ Xiao, Fusion Engineering and Design 146, 1282-1285, 2019

[J-17] “Simulation suite for plasma magnetic control at EAST tokamak”, A Castaldo, **A Mele**, R Albanese, R Ambrosino, G De Tommasi, ZP Luo, A Pironti, BJ Xiao, QP Yuan, Fusion Engineering and Design 133, 19-31, 2018

[J-18] “Model-based plasma vertical stabilization and position control at EAST”, G De Tommasi, BJ Xiao, R Albanese, R Ambrosino, A Castaldo, ZP Luo, **A Mele**, A Pironti, QP Yuan, Fusion Engineering and Design 129, 152-157, 2018

[J-19] “Status of the ITER remote experimentation centre”, J Farthing, T Ozeki, SC Lorenzo, N Nakajima, F Sartori, G De Tommasi, G Manduchi, P Barbato, A Rigoni, V Vitale, G Giruzzi, M Mattei, **A Mele**, F Imbeaux, J-F Artaud, F Robin, J Noe, E Joffrin, A Hynes, O Hemming, M Wheatley, S O’hira, S Ide, Y Ishii, M Matsukawa, H Kubo, T Totsuka, H Urano, O Naito, N Hayashi, Y Miyata, M Namekawa, A Wakasa, T Oshima, H Nakanishi, K Yamanaka, Fusion Engineering and Design 128, 158-162, 2018

[J-20] “ITER-like vertical stabilization system for the east Tokamak”, R Albanese, R Ambrosino, A Castaldo, G De Tommasi, ZP Luo, **A Mele**, A Pironti, BJ Xiao, QP Yuan, Nuclear Fusion 57 (8) 086039, 2017

[J-21] “Physics and operation oriented activities in preparation of the JT-60SA tokamak exploitation”, G Giruzzi, M Yoshida, JF Artaud, Ö Asztalos, E Barbato, P Bettini, A Bierwage, A Boboc, T Bolzonella, S Clement-Lorenzo, S Coda, N Cruz, Chr Day, G De Tommasi, M Dibon, D Douai, D Dunai, M Enoeda, D Farina, L Figini, M Fukumoto, K Galazka, J Galdon, J Garcia, M Garcia-Muñoz, L Garzotti, C Gil, C Gleason-Gonzalez, T Goodman, G Granucci, N Hayashi, K Hoshino, S Ide, R Imazawa, P Innocente, A Isayama, K Itami, E Joffrin, Y Kamada, K Kamiya, Y Kawano, H Kawashima, T Kobayashi, A Kojima, H Kubo, P Lang, Ph Lauber, E De La Luna, P Maget, G Marchiori, S Mastrostefano, G Matsunaga, M Mattei, DC McDonald, **A Mele**, Y Miyata, S Moriyama, A Moro, T Nakano, R Neu, S Nowak, FP Orsitto, G Pautasso, B Pégourié, L Pigatto, A Pironti, P Platania, GI Pokol, D Ricci, M Romanelli, S Saarelma, S Sakurai, F Sartori, H Sasao, M Scannapiego, K Shimizu, K Shinohara, J Shiraishi, S Soare, C Sozzi, W Stępniewski, T Suzuki, Y Suzuki, T Szepesi, M Takechi, K Tanaka, D Terranova, M Toma, H Urano, J Vega, F Villone, V Vitale, T Wakatsuki, M Wischmeier, R Zagórski, Nuclear Fusion 57 (8) 085001, 2017

[J-22] "Control-oriented tools for the design and validation of the JT-60SA magnetic control system", N Cruz, G De Tommasi, M Mattei, **A Mele**, Y Miyata, A Pironti, T Suzuki, Control Engineering Practice 63, 81-90, 2017

Conferences

[C-1] "A Model Predictive Control System for Different Phases of a Plasma Discharge in DEMO Tokamak", G Tartaglione, R Ambrosino, M Ariola, W Biel, LE di Grazia, M mattei, A Mele, 2023 SIAM Conference on Control and Its Applications (CT 2023), 111-118

[C-2] "Plasma magnetic control for DEMO tokamak using MPC", G Tartaglione, M Ariola, W Biel, LE Di Grazia, M Mattei, **A Mele**, 2022 IEEE Conference on Control Technology and Applications (CCTA), 825-830

[C-3] "Event-driven adaptive Vertical Stabilization in tokamaks based on a bounded Extremum Seeking algorithm", G De Tommasi, S Dubbioso, **A Mele**, A Pironti, 2022 IEEE Conference on Control Technology and Applications (CCTA), 831-836

[C-4] "A RL-based Vertical Stabilization System for the EAST tokamak" G De Tommasi, S Dubbioso, Y Huang, ZP Luo, **A Mele**, BJ Xiao, 2022 American Control Conference (ACC), 5328-5333

[C-5] "Stabilizing elongated plasmas using extremum seeking: the ITER tokamak case study", G De Tommasi, S Dubbioso, **A Mele**, A Pironti, 2021 29th Mediterranean Conference on Control and Automation (MED), 472-478

[C-6] "Model-based MIMO isoflux plasma shape control at the EAST tokamak: experimental results", R Ambrosino, A Castaldo, G De Tommasi, ZP Luo, Y Huang, **A Mele**, A Pironti, YH Wang, BJ Xiao, 2020 IEEE Conference on Control Technology and Applications (CCTA), 770-775

[C-7] "Conceptual design of DTT magnetic diagnostics", M Baruzzo, A Pironti, R Albanese, R Ambrosino, G Artaserse, A Castaldo, R Cavazzana, C Cianfarani, F Crisanti, G Marchiori, N Marconato, L Marrelli, **A Mele**, S Peruzzo, G Ramogida, D Terranova, P Zanca, M Zuin, 2019 46th EPS Conference on Plasma Physics, Milano, Italy

[C-8] "Shape reconstruction and eddy currents estimation via Kalman Filter at the EAST tokamak", **A Mele**, G De Tommasi, A Pironti, BJ Xiao, 2018 45th EPS Conference on Plasma Physics, Prague

[C-9] "On plasma vertical stabilization at EAST tokamak", G De Tommasi, **A Mele**, ZP Luo, A Pironti, BJ Xiao 2017 IEEE Conference on Control Technology and Applications (CCTA), 511-516

[C-10] "Robust plasma vertical stabilization in tokamak devices via multi-objective optimization", G De Tommasi, **A Mele**, A Pironti, 2017 International Conference on Optimization and Decision Science, 305-314

[C-11] "New conditions for annular finite-time stability of linear systems", F Amato, G De Tommasi, **A Mele**, A Pironti, 2016 IEEE 55th Conference on Decision and Control (CDC), 4925-4930

[C-12] "A MIMO architecture for integrated control of plasma shape and flux expansion for the EAST tokamak", R Albanese, R Ambrosino, G Calabrò, A Castaldo, F Crisanti, G De Tommasi, L Liu, ZP Luo, **A Mele**, A Pironti, BJ Xiao, QP Yuan, 2016 IEEE Conference on Control Applications (CCA), 611-616