Andrea Mazza

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Born: , 1987 – Savona (Italy)
Nationality: Italian

Current position

December 2016 - now | *Assistant Professor of Power Systems*, Politecnico di Torino (Italy)

Areas of specialisation

- *Power system* and *distribution system* analysis and optimisation
- *Reliability* of distribution systems
- *Grid integration* of distributed energy resources
- *Decision-making* applied to power and energy systems
- *Power-to-X* technologies for the operation of power systems

Past positions

May 2016 - November 2016 | Postdoctoral Research Fellow at Politecnico di Torino

September 2015 - May 2016 | Electrical Engineering at Terna Rete Italia

January 2015 - August 2015 | Postdoctoral Research Fellow at Politecnico di Torino

Current Teaching Activities

Practical works in the course in the course“Algebra lineare e Geometria - Modulo Calcolo Numerico”/ “Linear algebra and Geometry - “Numerical Analysis module” (professor Letterio Gatto)

Module “Sistemi di produzione dell’energia” / “Electricity generation systems” in the course“Sistemi elettrici industriali” / “Industrial electrical systems” (professor Angela Russo)

Laboratory and practical works in “Progettazione di impianti elettrici”/
“ Design of electrical plants” (professor Paolo Di Leo)

Laboratory in “Distribuzione ed utilizzazione dell’energia elettrica”/“Electricity distribution and utilisation” (professor Gianfranco Chicco)

Past Teaching Activities (years 2016 and 2017)

Practical works in the course in the course“Algebra lineare e Geometria - Modulo Calcolo Numerico”/ “Linear algebra and Geometry - “Numerical Analysis module” (professor Letterio Gatto)

Practical works in the course“Sistemi elettrici industriali” / “Industrial electrical systems”
(professor Angela Russo)

Laboratory in “Progettazione di impianti elettrici”/“ Design of electrical plants” (professor Paolo Di Leo)

Laboratory in “Distribuzione ed utilizzazione dell’energia elettrica”/“Electricity distribution and utilisation”
(professor Gianfranco Chicco)

Current Projects

- Improving the resilience of the distribution system - Collaboration with Ireti
- European project STORE & GO, URL:http://www.storeandgo.info/
- European project RE-SERVE, URL:http://www.re-serve.eu/
- European project MIGRATE, URL:https://www.h2020-migrate.eu/
- European project PLANET, URL:https://www.h2020-planet.eu

Past Projects

- European project SiNGULAR, URL:http://www.singular-fp7.eu/home/
- Project SHAPE, URL:www.enel.com/Shape_Project

Collaboration with foreign partners

2014 Visiting PhD student at "The University of Manchester" (UK)

2013 Visiting PhD student at "Universidade da Beira Interior" (Portugal)

2012 Visiting PhD student at "Universitatea Valahia din Targoviste" (Romania)

Education

January 2012 - March 2015 PhD in Electrical Engineering
Politecnico di Torino

October 2009 - December 2011 Master of Science in Electrical Engineering (cum laude)
Politecnico di Torino

October 2006 - October 2009 Bachelor Degree in Electrical Engineering (cum laude)
Politecnico di Torino

Grants, honors awards

2017 Winner of "Best PhD Thesis award" (IEEE PES Italy Section - Chapter 31)

2013 Winner of the "Concorso di idee" (Politecnico di Torino)

2012 "Optime Award" (Best Master student in Electrical Engineering)

"Prof. Giancarlo Vallauri" Award for the best Master Thesis in Electrical Engineering

2007 "Best Student Award" (Electrical Engineering), Politecnico di Torino

Selected Publications

PhD thesis

2015 Mazza A., "Innovative approaches for optimization of distribution system operation" Supervisor: prof. Gianfranco Chicco

Journal paper

2018 Flammini, M.G., Prettico, G., Julea, A., Fulli, G., Mazza, A., Chicco, G., "Statistical characterisation of the real transaction data gathered from electric vehicle charging stations", *Electric Power Systems Research* Volume 166, January 2019, Pages 136-150, DOI:https://doi.org/10.1016/j.epsr.2018.09.022

Ciocia, A., Boicea, V.A., Chicco, G., Di Leo, P., Mazza, A., Pons, E., Spertino, F., Nouredine, H."Voltage Control in Low-Voltage Grids Using Distributed Photovoltaic Converters and Centralized Devices", *IEEE Transactions on Industry Applications*, In press, DOI:10.1109/TIA.2018.2869104

Mazza, A., Bompard, E., Chicco, G., "Applications of power to gas technologies in emerging electrical systems", *Renewable and Sustainable Energy Reviews* , vol. 92, pp. 794–806, DOI:https://doi.org/10.1016/j.rser.2018.04.072

Meneses De Quevedo P., Contreras J., Mazza A., Chicco G., Porumb R., "Reliability Assessment of Microgrids with Local and Mobile Generation, Time-Dependent Profiles, and Intra-Day Reconfiguration", *IEEE Transactions on Industry Applications*, vol.54, pp. 61–72, DOI:10.1109/TIA.2017.2752685

2017 Chicco G., Mazza A., "Assessment of optimal distribution network reconfiguration results using stochastic dominance concepts", *Sustainable Energy, Grids and Networks*, vol. 9, pp. 75–79,
DOI:http://dx.doi.org/10.1016/j.segan.2016.12.005

2016 Enescu D., Ciocia A., Mazza A., Russo A., "Solutions based on thermoelectric refrigerators in humanitarian contexts", *Sustainable Energy Technologies and Assessments*, vol. 22, pp. 134–149, DOI:10.1016/j.seta.2017.02.016

Mazza A., Chicco G., Russo A., Virjoghe E.O., "Multi-Objective Distribution Network Reconfiguration Based on Pareto Front Ranking", *Intelligent Industrial Systems*, vol. 2, no. 4, pp. 287–302, DOI: 10.1007/s40903-016-0065-6

Paterakis N.G., Mazza A., Santos S.F., Erdinç O., Chicco G., Bakirtzis A.G., Catalão J.P.S., "Multi-Objective Reconfiguration of Radial Distribution Systems Using Reliability Indices", *IEEE Transactions on Power Systems*, vol. 31, no. 2, pp. 1048–1061, March 2016, DOI:10.1109/TPWRS.2015.2425801

2015 Mazza A., Chicco G., Andrei H. and Rubino M., "Determination of the relevant periods for intraday distribution system minimum loss reconfiguration", *International Transactions On Electrical Energy Systems*, vol. 25, no. 10, pp. 1992–2023, January 2015, DOI: 10.1002/etep.1941

2014 Mazza A., Chicco G., and Russo A., "Optimal multi-objective distribution system reconfiguration with multi criteria decision making-based solution ranking and enhanced genetic operators", *Elec. Power and Energy Syst.*, vol. 54, no.1, pp. 255–267, DOI: http://dx.doi.org/10.1016/j.ijepes.2013.07.006

Book chapter

2015 Chicco G., Mazza A., Russo A., Cocina V., and Spertino F., "Probabilistic harmonic power flow calculations with uncertain and correlated data", in : *Smart and Sustainable Power Systems: Operations, Planning, and Economics of Insular Electricity Grids*, Ed. JPS Catalão, pp. 95-154 – CRC Press – ISBN: 9781498712132, DOI: 10.1201/b18605-4

Conference paper

2018 Mazza, A., Carpaneto, E., Chicco, G., and Ciocia, A., "Creation of Network Case Studies With High Penetration of Distributed Energy Resources", 53rd International Universities Power Engineering Conference, *UPEC 2018*, Glasgow, UK, in press

Diaz, C., Mazza, A., Ruiz, F., Patino, D., and Chicco, G.,"Understanding Model Predictive Control for Electric Vehicle Charging Dispatch", 53rd International Universities Power Engineering Conference, *UPEC 2018*, Glasgow, UK, in press

Enescu,D., Diaz, C., Ciocia, A., Mazza, A., and Russo, A.,"Experimental assessment of the temperature control systems for a thermoelectric refrigeration unit", 53rd International Universities Power Engineering Conference *UPEC 2018*, Glasgow, UK, in press

2017 Ciocia A., Chicco G., Di Leo P., Gai M., Mazza A., Spertino F., Hadj-Said N., "Voltage control in low voltage grids: A comparison between the use of distributed photovoltaic converters or centralized devices", *IEEE 17th International Conference on Environment and Electrical Engineering (EEEIC)*, Milano (Italy)

2016 Quevedo P. M., Contreras J., Mazza A., Chicco G., Porumb R., "Modeling and Reliability Assessment of Microgrids Including Renewable Distributed Generation", *IEEE 16th International Conference on Environment and Electrical Engineering (EEEIC)*, Florence (Italy)

2015 de Bosio F., Pastorelli M., Mazza A., Chicco G., Bracco G., Giorcelli E., Mattiazzo G., and Raffero M., "Sea-wave power converter modeling for fault conditions analysis", *IEEE PowerTech 2015*, Eindhoven (The Netherlands), DOI: 10.1109/PTC.2015.7232703

Rubino S., Mazza A., Chicco G., and Pastorelli M., "Advanced Control of Inverter-interfaced Generation Behaving as a Virtual Synchronous Generator", *IEEE PowerTech 2015*, Eindhoven (The Netherlands), DOI: 10.1109/PTC.2015.7232753

Paterakis N.G., Santos S.F., Catalão J.P.S., Mazza A., Chicco G., Erdinç O., Bakirtzis A.G., ,"Multi-objective distribution system reconfiguration for reliability enhancement and loss reduction", *IEEE PES General Meeting 2015*, DOI:10.1109/PESGM.2015.7286524

2014 Mazza A., Chicco G., Bakirtzis E., Bakirtzis A., De Bonis A, and Catalão J., "Power Flow Calculations for Small Distribution Networks under Time-Dependent and Uncertain Input Data",*IEEE PES T. and D. Conference and Exposition 2014*, Chicago (USA), DOI: 10.1109/TDC.2014.6863395

Chicco G., Cocina V., Mazza A., and Spertino F., "Pre-Processing and Representation for Energy Calculations in Net Metering Conditions", *EnergyCon 2014*, Dubrovnick (Croatia), DOI: 10.1109/ENERGYCON.2014.6850460

De Bonis A, Catalão J., Mazza A., Chicco G., and Torelli F., "A Novel Optimization Algorithm Solving Network Reconfiguration", *PSCC 2014*, Wroclav (Poland), DOI: 10.1109/PSCC.2014.7038421

De Bonis A, Catalão J., Mazza A., and Chicco G. , "A Review on the Dynamic Analysis of Weak Distribution Networks", *UPEC 2014*, Cluj-Napoca (Romania), DOI:10.1109/UPEC.2014.6934820

Torelli F., Montegiglio P., De Bonis A., Catalão J., Chicco G., and Mazza A., "A New Approach for Solving DAE Systems Applied to Distribution Networks", *UPEC 2014*, Cluj-Napoca (Romania), DOI: 10.1109/UPEC.2014.6934736

Rubino M., Andrei H., Mazza A., and Chicco G., "Ranking the Radial Configurations for Minimum Losses Distribution System Reconfiguration. Part 1: Benchmark Result", *International Symposium on Electrical Engineering (ISEE) 2014*, Targoviste (Romania)

Rubino M., Mazza A., Andrei H., Chicco G., "Ranking the Radial Configurations for Minimum Losses Distribution System Reconfiguration Part 2: Intra-day Time-domain Assessment", *International Symposium on Electrical Engineering (ISEE) 2014*, Targoviste (Romania)

2013 Chicco G., and Mazza A.,"An Overview of the Probability-based Methods for Optimal Electrical Distribution System Reconfiguration ", *ISEEE – 4th International Symposium On Electrical and Electronics Engineering*, Galati (Romania), DOI:10.1109/ISEEE.2013.6674382

Mazza A., Chicco G., and Russo A., "Comparison of multi-objective optimization approaches for distribution system reconfiguration ", *Powertech 2013*, Grenoble (France), DOI: 10.1109/PTC.2013.6652482

2012 Mazza A., and Chicco G., "Application of TOPSIS in distribution systems multi-objective optimization", *WESC – 9th World Energy System Conference*, Suceava (Romania)

Chicco G., Mazza A., and Russo A., "Optimization and decision-making in electrical distribution networks", *EPE – 7th International Conference and Exposition on Electrical and Power Engineering*, Iaşi (Romania), DOI: 10.1109/ICEPE.2012.6463608

Mazza A., Chicco G., and Rubino M., "Multi-objective distribution system optimization assisted by Analytic Hierarchy Process", *2nd IEEE EnergyCon*, Florence (Italy), DOI: 10.1109/EnergyCon.2012.6347789

Chicco G., Mazza A., and Russo A., "Multi-objective optimization of distribution systems assisted by decision theory criteria", *8th IEEE MEDPOWER*, Cagliari (Italy), DOI: 10.1049/cp.2012.2020

Mazza A., and Chicco G., "Multi-objective distribution system optimization using Euclidean distance calculations in the genetic operators", *11th IASTED – European Conference on Power and Energy Systems EuroPES*, Naples (Italy)

Signature

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