EUROPEAN CURRICULUM VITAE

Personal details

Name	**Daniele Mestriner**
Address	Via All'Opera Pia 11 (Ex- CNR) 16145, Genoa, Italy
Telephone	Mobile: +39 3337973889
E-mail	daniele.mestriner@unige.it
Nationality	Italian
Date of Birth	October 30th 1992
Gender	Male

Professional Experience

• Date	June 2022 - now
Work and position	Assistant Professor/Research Fellow
• Institution	**University of Genoa – ING/IND 31**
• Date	November 2021-May 2022
Work and position	Post-Doc position
• Description	SPES 2021 Project – Grid services for tertiary regulation in the Smart Polygeneration Microgrid of Savona Campus: an analysis aimed at quantifying the economical convenience.
• Institution	**University of Genoa with SPES**
• Date	November 2019-November 2021
Work and position	Post-Doc position
• Description	Analysis of the impact of multi-levels converters in the presence of power system with high penetration of renewable-sources
• Institution	**University of Genoa with Regione Liguria and Toshiba S.p.A**.
• Date	June 2018 – October 2018
Work and position	Internship
• Description	Modelling and design phase of a reactive power compensation system based on STATCOMs.
• Institution	**ITER ORGANIZATION**
• Date	March 2017 – May 2017
Work and position	Lecturer
• Course title	Power system modelling and control
• Description	Master program of Energy engineering.
• Institution	**University of Genoa**

• Date	February 2014 – September 2014
• Position	Internship during studies.
• Description	Development of an equivalent plant for large photovoltaic systems and implementation in PLC for reactive power compensation and secondary voltage regulation
• Institution	**ABB, Via Enrico Albareto, 35, 16153 Genova GE**
• Type of activity	**Research**
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• Date	2015 - now
• Institution	IEEE
• Principle area of interest	Lightning Protection, Electromagnetic Compatibility, Power and Energy
• Title	**Member of IEEE**
Date	2018-2019
Institution	Genova IEEE Student Branch
Title	**Vice-Chair**

Studies

• Date	November 2016 – November 2019
• Institution	Università degli Studi di Genova, Genova, Italy
• Principal area of interest	Lightning protection, Lightning modelling, Smart Grids and Microgrids, Electromagnetic compatibility, Multi-Level power converters, Innovative control strategy for non-linear dynamic systems, Storage systems, Grid stability
• Title	**Doctorate in Electric Engineering**
• Degree	(Phd)
• Title of the thesis	Lightning-induced voltages on power lines: advances in modelling , computational effort optimization and innovative tools for the protection of overhead distribution lines
• Date	July 2017
• Institution	University of Genoa
• Degree	**National qualification for profession of engineer**
• Date	September 2014 – October 2016
• Institution	University of Genoa, Italia
• Principal area of interest	Microgrids and Smart Grids
• Title	**Master Degree in Electric Engineering, 109/110**
• Level	MsC
• Title of the thesis	PSCAD-EMTDC Model and Control system for the Savona Campus Smart Polygeneration Microgrid in islanded configuration.
• Date	September 2011 – September 2014
• Institution	Università degli Studi di Genova, Genova, Italia
• Principal area of interest	Electric power systems, principle of electric engineering
• Title	**Bachelor Degree in Electric Engineering, score 110 cum laude**
• Level	BsC
• Title of the thesis	Development of an equivalent plant for large photovoltaic systems and implementation in PLC
• Date	September 2006 – July 2011
• Institution	Scientific High School Nicoloso da Recco, Recco (GE) Italy
• Principal area of interest	Math, physic, English, Informatics, Natural Sciences, Chemistry
• Title	**High School degree, score 80/100**
• Level	Scientific High school degree

Scientific publications

[1] A. Bonfiglio, F. Delfino, M. Invernizzi, A. Labella, **D. Mestriner**, R. Procopio and P. Serra *"Approximate characterization of Large Photovoltaic Power Plants at the Point of Interconnection"* Proceedings of UPEC 2015, 1 – 4 September at Staffordshire University, Staffordshire, United Kingdom.

[2] M. Brignone, E. Ginnante, **D. Mestriner**, I. Ruggi, R. Procopio, F. Rachidi, A. Piantini – "*Evaluation of lightning-induced overvoltages on a distribution system: Validation of a dedicated code using experimental results on a reduced-scale model"*- International Conference on Environment and Electrical Engineering and Industrial and Commercial Power Systems Europe (EEEIC/ I&CPS), Milano, June 6 – 9 2017.

[3] A. Labella, F. Delfino, **D. Mestriner**, R. Procopio, "*A simplified first harmonic model for the Savona Campus Smart Polygeneration Microgrid* - "International Conference on Environment and Electrical Engineering and Industrial and Commercial Power Systems Europe (EEEIC/ I&CPS), Milano, June 6 – 9 2017.

[4] A. Labella, M. Brignone, **D. Mestriner**, R. Procopio, "*A new method to evaluate the stability of a droop controlled micro grid"*- 10th International Symposium on Advanced Topics in Electrical Engineering (ATEE), Bucarest, March 23 – 25 2017

[5] A. Bonfiglio, M. Brignone, **D. Mestriner**, R. Procopio, A. Labella, M. Invernizzi, "*A Simplified Microgrid Model for the Validation of Islanded Control Logics"* – Energies, vol. 10, issue 8.

[6] M. Brignone, **D. Mestriner**, R. Procopio, A. Piantini, and F. Rachidi, "*Evaluation of the Mitigation Effect of the Shield Wires on Lightning Induced Overvoltages in MV Distribution Systems Using Statistical Analysis*," IEEE Transactions on Electromagnetic Compatibility, 2017.

[7] A. Bonfiglio, F. Delfino, A. Labella, **D. Mestriner**, F. Pampararo, R. Procopio, et al., "*Modeling and Experimental Validation of an Islanded No-Inertia Microgrid Site,"* IEEE Transactions on Sustainable Energy, vol. PP, pp. 1-1, 2018.

[8] A. Labella, **D. Mestriner**, F. Pampararo, and R. Procopio, "*Measurement campaign and experimental results of an islanded microgrid*," in 2017 International Conference on ENERGY and ENVIRONMENT (CIEM), 2017, pp. 31-35.

[9] M. Brignone, **D.Mestriner,** R.Procopio, D. Javor, V.Javor, "Lightning Induced Voltages on Overhead Lines for Different Return Stroke Engineering Models", in 2018 International Symposium on Electromagnetic Compatibility (EMC EUROPE).

[10] M. Brignone, **D. Mestriner**, R. Procopio, F. Rachidi and A. Piantini, "Mitigation of Lightning-Induced Overvoltages Using Shield Wires: Application of the Response Surface Method," 2018 34th International Conference on Lightning Protection (ICLP), Rzeszow, 2018, pp. 1-6

[11] **D. Mestriner**, "Analysis of the Impact of the Lightning Return Stroke Models on Overhead Transmission Lines Induced Voltages," 2018 IEEE Symposium on Electromagnetic Compatibility, Signal Integrity and Power Integrity (EMC, SI & PI), Long Beach, CA, 2018, pp. 351-356.

[12] A. Bonfiglio, A. Labella, **D. Mestriner**, F. Milani, R. Procopio and Y. Ye, "ITER Fast Discharging Units: A Black Box Model Approach for Circuital Simulations," 2018 IEEE International Conference on Environment and Electrical Engineering and 2018 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I&CPS Europe), Palermo, 2018, pp. 1-7.

[13] F. Blanco, A. Labella, **D. Mestriner** and A. Rosini, "Model Predictive Control for Primary Regulation of Islanded Microgrids," 2018 IEEE International Conference on Environment and Electrical Engineering and 2018 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I&CPS Europe), Palermo, 2018, pp. 1-6.

[14] Massimo Brignone, **Daniele Mestriner**, Renato Procopio, Alexandre Piantini, Farhad Rachidi, "On the Stability of FDTD-Based Numerical Codes to Evaluate Lightning-Induced Overvoltages in Overhead Transmission Lines", IEEE Transactions on Electromagnetic

Compatibility.

[15] M. Brignone, **D. Mestriner**, R. Procopio, and F. Delfino, "A review on the return stroke engineering models attenuation function: Proposed expressions, validation and identification methods," Electric Power Systems Research, vol. 172, pp. 230-241, 2019/07/01/ 2019

[16] **Daniele Mestriner**, Marco Invernizzi, "Analysis of Lightning Effects on Power plant Connection", International Journal of Power and Energy Systems 38(2)

[17] M. Brignone, **D. Mestriner**, R. Procopio, M. Rossi, A. Piantini, and F. Rachidi, "EM Fields Generated by a Scale Model Helical Antenna and Its Use in Validating a Code for Lightning-Induced Voltage Calculation," IEEE Transactions on Electromagnetic Compatibility, pp. 1-10, 2019.

[18] **D. Mestriner**, "Boundary Layer Tuning Procedure for First Order Sliding Mode Controllers," in 2019 11th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 2019, pp. 1-5.

[19] **D. Mestriner**, "Feasibility Study of Supercapacitors as Stand-Alone Storage Systems for Series Hybrid Electric Vehicles," in 2019 11th International Symposium on Advanced Topics in Electrical Engineering (ATEE), 2019, pp. 1-5.

[20] M. Brignone, D.**Mestriner**, et al., "Analytical Expressions for Lightning Electromagnetic Fields With Arbitrary Channel-Base Current—Part I: Theory," IEEE Trans. Electromagn. Compat., pp. 1–9, 2020, doi: 10.1109/TEMC.2020.3018199

[21] D. **Mestriner** et al., "Analytical Expressions for Lightning Electromagnetic Fields With Arbitrary Channel-Base Current. Part II: Validation and Computational Performance," IEEE Trans. Electromagn. Compat., pp. 1–8, 2020, doi: 10.1109/TEMC.2020.3018108

[22] D. **Mestriner**, A. Labella, M. Brignone, A. Bonfiglio, and R. Procopio, "A transient stability approach for the analysis of droop-controlled islanded microgrids," Electr. Power Syst. Res., vol. 187, p. 106509, Oct. 2020, doi: 10.1016/j.epsr.2020.106509

[23] A. L. Fata, I. Tosi, D. **Mestriner**, E. Fiori, and F. Delfino, "A Review of Lightning Location Systems: Part 1-Performance Parameters and Existing Networks," in 2020 IEEE International Conference on Environment and Electrical Engineering and 2020 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I CPS Europe), Jun. 2020, pp. 1–6, doi: 10.1109/EEEIC/ICPSEurope49358.2020.9160809

[24] D. **Mestriner** and M. Brignone, "Corona Effect Influence on the Lightning Performance of Overhead Distribution Lines," Appl. Sci., vol. 10, no. 14, Art. no. 14, Jan. 2020, doi: 10.3390/app10144902.

[25] D. **Mestriner**, M. Brignone, R. Procopio, A. Piantini and F. Rachidi, "A New Channel-Base Lightning Current Formula With Analytically Adjustable Parameters," in IEEE Transactions on Electromagnetic Compatibility, vol. 63, no. 2, pp. 542-549, April 2021, doi: 10.1109/TEMC.2020.3009273.

[26] L. Farina, D. **Mestriner**, R. Procopio, M. Brignone and F. Delfino, "The Lightning Power Electromagnetic Simulator for Transient Overvoltages (LIGHT-PESTO) Code: A User-Friendly Interface With the MATLAB-Simulink Environment," in IEEE Letters on Electromagnetic Compatibility Practice and Applications, vol. 2, no. 4, pp. 119-123, Dec. 2020, doi: 10.1109/LEMCPA.2020.3032180.

[27] **Mestriner**, D.; Ribeiro de Moura, R.A.; Procopio, R.; de Oliveira Schroeder, M.A. Impact of Grounding Modeling on Lightning-Induced Voltages Evaluation in Distribution Lines. Appl. Sci. 2021, 11, 2931. https://doi.org/10.3390/app11072931

[28] D. **Mestriner** et al., "An Efficient Methodology for the Evaluation of the Lightning Performance of Overhead Lines," in IEEE Transactions on Electromagnetic Compatibility, doi: 10.1109/TEMC.2021.3054427.

[29] M. Nicora, D. **Mestriner** et al., "Estimation of the Lightning Performance of Overhead Lines Accounting for Different Types of Strokes and Multiple Strike Points," in IEEE Transactions on Electromagnetic Compatibility, doi: 10.1109/TEMC.2021.3060139.

[30] Rosini, A., **Mestriner**, D., Labella, A., Bonfiglio, A., & Procopio, R. (2021). A decentralized approach for frequency and voltage regulation in islanded PV-Storage microgrids. Electric

Power Systems Research, 193, 106974.

[31] Nicora, M., **Mestriner**, D., Brignone, M., Bernardi, M., Procopio, R., & Fiori, E. (2021). A 10-year study on the lightning activity in Italy using data from the SIRF network. Atmospheric Research, 256, 105552.

[32] Torchio, R., Nicora, M., **Mestriner**, D., Brignone, M., Procopio, R., Alotto, P., & Rubinstein, M. (2022). Do Wind Turbines Amplify the Effects of Lightning Strikes A Full-Maxwell Modelling Approach. IEEE Transactions on Power Delivery.

[33] Aramini, R., Brignone, M., **Mestriner,** D., Pastorino, M., Procopio, R., Randazzo, A., & Rubinstein, M. (2022). On the Fourier Transform of Measured Electric Fields Radiated by a Lightning Return Stroke. IEEE Transactions on Electromagnetic Compatibility

[34] Brignone, M., Procopio, R., Nicora, M., **Mestriner**, D., Rachidi, F., & Rubinstein, M. (2022). A Prony-based approach for accelerating the lightning electromagnetic fields computation above a perfectly conducting ground. Electric Power Systems Research, 210, 108125.

[35] Brignone, M., Procopio, R., Nicora, M., **Mestriner**, D., Rachidi, F., & Rubinstein, M. (2022). A Prony-Based Approach for Accelerating the Lightning Electromagnetic Fields Computation: Effect of the Soil Finite Conductivity. Electric Power Systems Research, 209, 108013.

[36] Nicora, M., **Mestriner**, D., Brignone, M., Bernardi, M., Procopio, R., Fiori, E., ... & Rachidi, F. (2022). Assessment of the Lightning Performance of overhead distribution lines based on Lightning Location Systems data. International Journal of Electrical Power & Energy Systems, 142, 108230.

[37] Aramini, R., Brignone, M., **Mestriner**, D., Pastorino, M., Procopio, R., Rachidi, F., ... & Rubinstein, M. (2022). On the reconstruction of the attenuation function of a return-stroke current from the Fourier Transform of finite-duration measurements. International Journal of Electrical Power & Energy Systems, 142, 108186.

[38] **Mestriner, D**., & Nicora, M. (2022). On the Importance of Considering Realistic Orography Into the Evaluation of Lightning Electromagnetic Fields in Mixed Path. IEEE Transactions on Electromagnetic Compatibility.

[39] Brignone, M., Nicora, M., **Mestriner**, D., Procopio, R., Petrarca, C., Formisano, A., ... & Delfino, F. (2022). An Efficient Method for the Computation of Electromagnetic Fields Associated With Tortuous Lightning Channels. IEEE Transactions on Electromagnetic Compatibility, 64(5), 1431-1441.

[40] Minetti, M., Fresia, M., & **Mestriner**, D. (2021, September). An MPC approach for a PV-BESS islanded system primary regulation. In 2021 IEEE International Conference on Environment and Electrical Engineering and 2021 IEEE Industrial and Commercial Power Systems Europe (EEEIC/I&CPS Europe) (pp. 1-6). IEEE.

[41] **Mestriner**, D., Brignone, M., Procopio, R., Rachidi, F., & Piantini, A. (2021, September). A Method for the Improvement of the Stability in FDTD-Based Numerical Codes Evaluating Lightning-Induced Voltages. In 2021 35th International Conference on Lightning Protection (ICLP) and XVI International Symposium on Lightning Protection (SIPDA) (Vol. 1, pp. 1-7). IEEE.

[42] Brignone, M., Procopio, R., **Mestriner,** D., Rossi, M., Delfino, F., Rachidi, F., & Rubinstein, M. (2021, September). Lightning-induced Voltages on Overhead Distribution Lines Computed through Analytical Expressions for the Electromagnetic Fields. In 2021 35th International Conference on Lightning Protection (ICLP) and XVI International Symposium on Lightning Protection (SIPDA) (Vol. 1, pp. 01-06). IEEE.

[43] **Mestriner, D**., Marchesoni, F., Procopio, R., & Brignone, M. (2022). Attenuation of Lightning-Induced Effects on Overhead Distribution Systems in Urban Areas. Applied Sciences, 12(15), 7632.

[44] **Mestriner, D**., Rosini, A., Xhani, I., Bonfiglio, A., & Procopio, R. (2022). Primary Voltage and Frequency Regulation in Inverter Based Islanded Microgrids through a Model Predictive Control Approach. Energies, 15(14), 5077.

[45] Moura, R. A., **Mestriner**, D., Procopio, R., Schroeder, M. A., Assis, F. A., Nicora, M., & Delfino, F. (2022, June). A Simplified Method for the Evaluation of Lightning-Induced

Overvoltage Peaks with Frequency-Dependent Soil Parameters. In 2022 IEEE International Conference on Environment and Electrical Engineering and 2022 IEEE Industrial and Commercial Power Systems Europe (EEEIC/I&CPS Europe) (pp. 1-6). IEEE.

[46] Aresi, R., Bonfiglio, A., **Mestriner**, D., Pace, G., Pongiglione, P., & Soressi, E. (2022, June). Soft-Start Capabilities of Battery Energy Storage Systems: Simulative Analysis of an Applicative Test-Case. In 2022 IEEE 21st Mediterranean Electrotechnical Conference (MELECON) (pp. 28-33). IEEE.

[47] Moura, R. A., **Mestriner**, D., Procopio, R., Schroeder, M. A., Assis, F. A., & Delfino, F. (2022, May). Lightning-Induced Overvoltage Peaks Considering Soil Parameters Frequency-Dependence: New Approach with Dominant Frequency Associated with Lightning Current Front Time. In 2022 20th International Conference on Harmonics & Quality of Power (ICHQP) (pp. 1-6). IEEE.

[48] **Mestriner**, D., Ribeiro de Moura, R. A., Procopio, R., & de Oliveira Schroeder, M. A. (2021). Impact of Grounding Modeling on Lightning-Induced Voltages Evaluation in Distribution Lines. Applied Sciences, 11(7), 2931.

Patents

1) "Method and System For Assessing the Island Mode MicroNetwork Stability", codice WO 2020/245752 A1
2) Method and Systems for Controlling Inverters in Microgrid" ,codice WO 2021/009672 A1

Editorial roles

- Editor of the Special Issue "Lightning Modeling and Its Effects on Electric Infrastructures" published on "Applied Sciences in 2021
- Editor of the Special Issue "Physics Principles, Measurements and Characteristics of Lightning" in publishing on Applied Sciences in 2022
- Topic Advisory Panel Member of "Applied Sciences" in 2021.
- Editor of the journal "Advances in Science, Technology and Engineering Systems Journal" since 2021. (https://astesj.com/editorial-board/)
- Editor of the "Journal of Electrical and Electronic Engineering (JEEE) in 2020.
- Editor of the journal "Electrical Science & Engineering" from 2019 to 2020

Technical Committees

- ACEEE 2021: 4th Asia Conference on Energy and Electrical Engineering
- ASET 2019: Advances in Sciences and Engineering Technology
- CEEPE 2021: 4th International Conference on Energy, Electrical and Power Engineering
- CIEM 2019: International Conference on Energy and Environment
- CPEEE 2021: International Conference on Power, Energy and Electrical Engineering
- EEEIC 2019: IEEE International Conference on Environment and Electrical Engineering and 2019 IEEE Industrial and Commercial Power Systems Europe (EEEIC / I&CPS Europe)
- ICOASE 2019: International Conference on Advanced Science and Engineering

Awards

Young Scientist Award" in 2022 by the Scientific Committee of the International Conference on Lightning Protection (ICLP) for the paper "Representation of slow-front lightning currents using a new channel-base function"

Technical skills

Modelling and calculation software skills

- Professional knowledge of Matlab and Simulink tools for the simulation and control of electric energy systems and the implementation of advanced control logics for the optimal operation of grids and smart microgrids;
- Professional knowledge of PSCAD software for the modelling and simulation of electric system in electromagnetic transients;
- Professional knowledge of COMSOL software for the study of electric systems through a

finite-element analysis

- Basic knowledge of Neplan software for the steady state and dynamic simulation of electric power systems;
- Professional knowledge of Office software for the writing of technical reports and presentations;
- Professional knowledge of Windows Operating system (XP, Vista, 7, 8 e 10);
- Good knowledge of Autocad software for the development of technical drawings and schemes;

Professional skills

- Modelling and control of Microgrids and Smart Grids with the use of dedicated software and on-field testing for the evaluation of grid's response to faults in islanded configuration
- Modelling and design on lightning performance and shield wire effects on MV distribution systems by means of the use of dedicated software and statistical instruments.
- Evaluation of lightning induced effects on distribution and transmission power lines
- Evaluation of Smart Grids stability conditions in islanded configuration and improvement of it by means of changing control parameters
- Modelling of photovoltaic systems and design of a centralized control system for the management of large photovoltaic plants in accordance to the requirements of specific grid codes
- Modelling and design of DC electromechanical circuit breakers for interrupting high currents in the presence of high penetrating magnetic field
- Modelling and design of STATCOM for reactive power compensation

Personal Skills

First language **Italian**

Other Languages

Self evaluation
European level

	Comprehension			Speaking			Writing	
	Listening		Reading	Listening		Reading		
English	B1	Autonomous user		B2	Autonomous user		B2	Autonomous user
French	A2			A2			A2	

Communication and relational skills.

Good attitude at working in groups gained during the experience of the university study and during the agonistic sport experience. Excellent attitude to the flexibility, planning and details precision.

Other skills

I practice track and field at agonistic level and I have been involved in many national events and I am part of the Genoa University first team since 2013. Sport Curriculum: 2018 Regional 400m Silver medal, 2017 9th place University Italian Championship 400m, 2017 Regional 400m Silver medal, 2016 Regional 400m Gold medal, 2016 University Italian Championship 4x400 Bronze medal, 2016 Regional 4x400 Gold Medal, 2015 Regional 4x400 Gold Medal, 2014 Regional 4x400 Gold Medal, 2014 U23 Regional 400m Gold Medal.

Licences

Italian driving license B

Further information

I like playing every kind of sports and i think that with the willpower and the hard work every goal can be reached.

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I authorize the treatment of my personal data in accordance to privacy legislation

December 6th 2022