Università di Genova

Massimo Brignone

Associate Professor

EDUCATION AND TRAINING

2006
PhD in Mathematic and Applications
Methods for the solution of linear and non-linear inverse scattering problems
Università di Genova – Genova - IT

2003
Degree (Old System) in Mathematic
Level Algebras and their Hilbert functions - 110/110 e lode
Università di Genova - Genova- IT

1998
High School Diploma
60/60
Liceo Scientifico “A. Issel” – Finale Ligure (Savona) - IT

PROFESSIONAL HISTORY

2022 – ONGOING
Associate Professor
Teaching activity for electrical circuits, electrotechnic and electrical systems for energy , together with research activity and technology transfer
Università di Genova – Genova - IT

2019-2022
Assistant Professor (RTD-A e RTD-B law 30.12.2010, n. 240)
Teaching activity for electrical circuits, electrotechnic and electrical systems for energy , together with research activity and technology transfer
Università di Genova – Genova - IT

2013 - 2017
Research fellow
Research activities in the following areas: electromagnetic fields due to lightning phenomena; optimization systems for the management of smart power grids
Università di Genova – Genova - IT

Università di Genova

2009 - 2011
Research fellow
Research activity in the field of regularization methods for inverse electromagnetic scattering problems.
INDAM (Istituto Nazionale Alta Matematica 'Francesco Severi') presso Università di Genova - Genoa - IT

2008
Research fellow and Contract Professor
Research activities in the field of regularization methods for inverse electromagnetic scattering problems and teaching in the field of information retrieval systems.
Università di Verona - Verona - IT

2006 - 2008
Research fellow
Research activity in the field of regularization methods for inverse electromagnetic scattering problems.
Università di Genova - Genova - IT

ACADEMIC APPOINTMENTS

2023- ONGOING
Quality Assurance Commission for the Degree Courses in Electrical Engineering and Energy Engineering
Università di Genova - Genova – IT

2022- ONGOING
Commission for the Management of the Timetable for the Degree Course in Electrical Engineering
Università di Genova - Genova – IT

2021- ONGOING
Commission for the Third Misson and Spin-Off
Università di Genova - Genova – IT

2018- ONGOING
Teaching staff of the PhD program in "Science and Technology for Electrical Engineering, Naval Engineering, and Complex Mobility Systems"
Università di Genova - Genova – IT

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EXPERIENCE

SCIENTIFIC RESPONSIBILITY FOR RESEARCH PROJECTS ACCEPTED FOR FUNDING ON THE BASIS OF COMPETITIVE CALLS INVOLVING PEER REVIEW

2022 Project PRIN “FELINES”

Involvement, due to specific experience acquired, in the Project of Relevant National Interest (PRIN) "Forecast of the Effects of Lightning in Electrical Systems (FELINES)" - co-funded by the Ministry of University and Research, for a duration of two years. The project aims to propose preventative protection from direct and indirect lightning strikes for electrical infrastructure, such as transmission and distribution lines. This protection is based on the use of sensors that can measure the electric field of the so-called Preliminary Breakdown Pulses (PBPs), which precede the most dangerous phase of the lightning strike (called Return Stroke - RS) by several tens of milliseconds. If the PBP field is properly detected, it is possible to disconnect sensitive equipment before the RS occurs. The project involves three units: University of Genoa - Department of Naval, Electrical, Electronic and Telecommunications Engineering - DITEN - (Prof. Renato Procopio and Prof. Massimo Brignone); University of Pisa - Department of Electrical Engineering of Energy, Systems, Land, and Construction - DESTEC - (Prof. Sami Barmada); Luigi Vanvitelli University of Campania - Department of Engineering (Prof. Alessandro Formisano).

Università di Genova -Genova - IT e MUR

2022 Project PRIN PNRR “BERENICE”

Formal involvement, due to specific experience acquired, in the Project of Relevant National Interest (PRIN PNRR) BERENICE - Battery EneRgy management systems for reNewable and citizen energy communities - co-funded by the Ministry of University and Research. Three units are involved in the project: the Department of Astronautical, Electrical, and Energy Engineering, SAPIENZA University of Rome (Prof. Rodolfo Araneo), the Polytechnic University of Milan (Prof. Francesco Grimaccia), and the University of Genoa (Prof. Renato Procopio and Prof. Massimo Brignone). The project aims to provide a comprehensive vision of storage systems, starting with circuit modeling, moving on to diagnostic elements, and ending with its inclusion within polygeneration microgrids..

Università di Genova -Genova - IT e MUR

2020 Responsability of research project

Head of the research project "Structural failure of civil works following direct lightning strikes: electrical analysis for the safety of public works" with the aim of recruiting a research fellow. The aim of the project was to investigate the potential damaging effects of direct lightning strikes on civil structures most susceptible to this type of phenomenon, in order to highlight the limiting conditions for the structures and to highlight a link between the lightning phenomenon (in terms of current peak and waveform and probability of occurrence) and the failure of the structure itself..

Fondazione CARIGE -Genova - IT

Università di Genova

TEACHING OR RESEARCH POSITIONS (FELLOWSHIPS) AT FOREIGN UNIVERSITIES AND RESEARCH INSTITUTES

2023-2024 Teaching at foreign university

Teaching "Lightning Induced Voltages on Distribution Systems" for students of the Bachelor's and Doctorate Courses in Electrical Engineering.

Federal University of São João del-Rei – UFSJ - Minas Gerais-Bazil

2017-2018 Teaching at foreign university

Teaching "Lightning effects on power systems: theory and applications with the software PSCAD-EMTDC" for students of the Bachelor's and Doctorate Courses in Electrical Engineering..

University of Nis -Republic of Serbia

EDITORSHIP OR PARTICIPATION IN EDITORIAL BOARDS OF JOURNALS, PUBLISHING SERIES, ENCYCLOPAEDIAS AND TREATISES

2021-2022 participation in editorial boards

Guest Editor for the Special Issue "Physics Principles, Measurements and Characteristics of Lightning" for the journal Applied Science.

2020-2021 participation in editorial boards

Guest Editor for the Special Issue "Lightning Modeling and Its Effects on Electric Infrastructures" for the journal Applied Science.

2017-2019 participation in editorial boards

Editorial Board for Journal of Electrical and Computer Engineering

2017-2018 partecipazione a comitato editoriale

Guest Editor for the Special Issue "Lightning effects on electric and communication infrastructures" for the international journal The Open Atmospheric Science Journal

PRIZES AND ACCOLADES FOR SCIENTIFIC ACTIVITY, INCLUDING MEMBERSHIP OF ACADEMIES

2022 prize “Honorable paper mention”

Second best paper on the journal IEEE Transaction on EMC 2022 for the paper R. Aramini, M. Brignone, D. Mestriner, M. Pastorino, R. Procopio, A. Randazzo, M. Rubinstein “On the Fourier Transform of Measured Electric Fields Radiated by a Lightning Return Stroke” (2022) IEEE Transactions on Electromagnetic Compatibility, 64 (4), pp. 1257-1264.

IEEE EMC+SIPI Conference - USA

2016 prize “best paper”

Università di Genova

Best paper with young students in the authors for the contribution to the conference "Information, Intelligence, Systems and Applications (IISA)" 13-15 July 2016, Porto Carras Grand Resort,Chalkidiki, Greece for the paper F. Delfino, M. Brignone, L. Barillari, R. Procopio, A. Nilberto and M. Fichera "Optimal Thermal Power Production by means of an Equivalent Electric Circuit for a Thermal Network: the Savona Campus Smart Polygeneration Microgrid Case"
IISA Conference – Porto Carras - Grecia

2015 prize StartCup
Second prize for the business idea "MASS - UN SISTEMA DI APPROVVIGIONAMENTO ENERGETICO INTELLIGENTE, SOSTENIBILE ED ECONOMICO PER UTENZE RESIDENZIALI E COMMERCIALI" at the basis of the Spinoff WIGAAR S.r.l.
Università di Genova - Genova – IT

PARTICIPATION IN THE CREATION OF NEW BUSINESS ENTITIES (SPIN-OFFS), DEVELOPMENT, USE AND COMMERCIALISATION OF ACADEMIC PATENTS

2017-2020 CEO of WIGAAR S.r.l.
Consulting for the design, control, management, and optimization of energy flows.
WIGAAR S.r.l. – Savona – IT

2020 Italian patent
Inventor of the Italian patent "Method and system for assessing the stability of microgrids in island mode" Italian patent priority number: IT102019000008163 extended with the title "METHOD AND SYSTEM FOR ASSESSING THE ISLAND MODE MICRONETWORK STABILITY" to international patent WO2020245752A1 (Inventors: Andrea Bonfiglio, Renato Procopio, Alessandro Giuseppe Labella, Daniele Mestriner, Massimo Brignone).
Università di Genova - Genova – IT

OTHER EXPERIENCES

2020 - ONGOING Consulting
Scientific manager of the "EMS Solution" framework contract signed with Falck Renewables (now Renantis Solutions) in 2020, for the application of optimization techniques for the planning and scheduling of production in polygeneration microgrids.
Renantis Solutions – Milano - IT

2020-2023 Teaching
Professional Assignment for Co-teaching Activities relating to the Course "TECNICO SUPERIORE PER L'APPROVVIGIONAMENTO ENERGETICO E LA COSTRUZIONE DI IMPIANTI"
FONDAZIONE ISTITUTO TECNICO SUPERIORE PER L'EFFICIENZA ENERGETICA – Savona - IT

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