


Vito Calderaro | Curriculum Vitae (short)

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PERSONAL INFORMATION

Vito Calderaro
Date of birth: September 23, 1974
Citizenship: Italian
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EDUCATION AND MAIN TITLES

- ☐ April 2006: Ph.D. degree in Computer Science Engineering (Power System curriculum), University of Salerno, Italy. Thesis: "On the development of Distributed Generation in MV networks".
- ☐ May 2001: M.S. Degree in Electronic Engineering, University of Salerno, Italy.
- ☐ 2001: Qualification as Engineer
- ☐ 2016: IEEE Senior Member
- ☐ 2014 and 2019: Scientific qualification as Associate Professor

POSITION AND TEACHING ACTIVITY

- ☐ 2022 – present: Associate Professor in Power Systems c/o Department of Industrial Engineering, University of Salerno.
- ☐ 2019 – 2022: Assistant Professor in Power Systems c/o Department of Industrial Engineering, University of Salerno.
- ☐ 2006 – 2019: Ph.D, Research fellow c/o Department of Industrial Engineering, University of Salerno.
- ☐ 2018 – 2019: Professor of *Power System Control* (12 ECTS), graduates' course, University of Naples "Federico II", Department of Electrical Engineering and Information Technology.
- ☐ 2018 – present: Professor of *Complement of automatic Control* (3 ECTS), graduates' course, University of Salerno, Department of Industrial Engineering.
- ☐ 2014 – 2018: Professor of *Production of energy from renewable energy and cogeneration* (6 ECTS), undergraduates' course, University of Naples "Federico II", Department of Electrical Engineering and Information Technology.
- ☐ 2009 – 2011: Professor Power System Automation (6 ECTS), graduate course, Faculty of Engineering of University of Sannio.

- Spring 2006: Academic visitor at The School of Electrical and Electronic Engineering of the University of Manchester – Research Group of prof. J.V. Milanovic.
- March 2018: Lectures on the following short course at the University of Manchester:
 - Voltage control in smart grids and the potentiality of distributed generation
 - Electric Vehicles and Power Systems: a perspective of integration

RESEARCH ACTIVITY

From 2001 to 2010, the research activities have been carried out at the Department of Information and Electrical Engineering of the University of Salerno and from 2010 to present at the Department of Industrial Engineering.

The scientific production has embraced a broad spectrum of research topics always aimed at the characterization, modeling, planning and operation of power systems and distributed systems and also transportation systems. He is the author of about 100 scientific papers. In particular, the research activity is on the following areas:

Distributed Generation and power systems

Techniques based on soft-computing methodologies for planning and management of power systems in presence of DG with or without storage systems.

Optimal power flow problems

Innovative optimization techniques based on heuristic algorithms for optimal power flow problems; OPF for planning of distribution networks in the liberalized electricity market based on evolutionary optimization methodologies; formulation of power flow and OPF problems for radial and meshed power distribution networks.

Innovative power system architectures

Architectures for monitoring and remote control of micro-generators from renewable source connected to MV and LV distribution systems.

Voltage control

Control method for voltage regulation in distribution systems in the presence of high DG penetration based on sensitivity analysis.

Protection systems

Design of control algorithms for innovative protection systems for distribution networks in presence of DG, based on microcontrollers; algorithms for setting and planning protection systems in distribution systems.

Demand side management

Innovative algorithms for smart management of load to support of distribution systems.

ICT, transportation and electric vehicles

Telematics architectures for transportation systems for the provision of advanced services; Impact of electric vehicles (EVs) on power systems to support the grid, scheduling algorithm to charge EVs; planning and operation of storage systems in power systems and railway engineering.

All research activities have been carried out within national and international projects, in cooperation with Italian universities (University of Sannio, Catania, Palermo, L'Aquila, Bari, Genova), foreign universities (School of Electrical and Electronic Engineering – Manchester, ECE – Urbana, Illinois, ECE – University of Cyprus, EEE – University of Melbourne).

PROJECTS

Scientific coordinator of ORs for TRAIN Consortium (Consorzio per la ricerca e lo sviluppo di tecnologie per il trasporto innovativo) in the project Sentinel “Sistema di pesatura dinamica intelligente per la gestione del traffico pesante” – PON Ricerca e innovazione 2014-2020.

Scientific coordinator for the following local projects:

- 2021-2023: Strategie di uso di sistemi di accumulo II-Life nelle smart grid
- 2022-2024: Sistemi di accumulo dell'energia e impatto sulle reti ferroviarie urbane
- Participant as researcher for about 10 local projects on power systems topics.

Participant as Researcher for the following international and national projects:

- Research project: "Integration of New and Renewable Energy into Urban Electrical Networks" in collaboration with the Institute for Energy Systems, University of Edinburgh and under the British-Italian partnership programme for young Researchers (2005-2006), funded by the Italian Ministry of Education, University and Research and the British Council. 2006-2007.
- Scientific Research Program of Relevant National Interest (PRIN) 2002, funded by the Italian Ministry of Education, University and Research and entitled "Information and Communication Technology (ICT) for electric infrastructure operations", with the sub-project "Applying ICT to distribution networks: from the role of "transport provider" to "facilitator of competition", scientific coordinator Prof. A. Piccolo. 2003-2004.
- Scientific Research Program of Relevant National Interest (PRIN) 2005, funded by the Italian Ministry of Education, University and Research and entitled "Tools and methods for evolution of subtransmission and distribution networks in liberalized electricity markets", with the sub-project "Electrical distribution networks: management of both critical operating conditions and Distributed Generation", scientific coordinator Prof. A. Piccolo. 2006-2007.
- Scientific Research Program of Relevant National Interest (PRIN) 2008, funded by the Italian Ministry of Education, University and Research and entitled: "Integration of DG in smart microgrid based on ICT" with the sub- project "Methodologies for innovative management of microgrids in presence of distributed generation from renewable sources based on fourth generation telematic infrastructures", scientific coordinator Prof. A. Piccolo. 2010-2012.
- Research project funded by the UE 7th Framework Programme and entitled: "Concerted coordination for the promotion of efficient multimodal interfaces (DELTA)", 2009-2010, scientific coordinator Prof. A. Piccolo.
- Research project funded by the UE 7th Framework Programme and entitled: "COSMO - Cooperative Systems for Sustainable Mobility and Energy Efficiency", 2010-2014, scientific coordinator Prof. V. Galdi.

AWARDS AND RECOGNITIONS

- Best Paper Award for the paper *Sizing of II-life Batteries for Grid Support: application and economic evaluations* in VIII International Conference Smartgreens 2019 on “Smart Cities and Green ICT Systems”, Creta, 2019.
- Certificate of outstanding contribution in reviewing International Journal of Electrical Power and Energy Systems (Elsevier), March, 2017.
- Certificate of outstanding contribution in reviewing Applied Energy (Elsevier), September, 2017.
- Certificate of outstanding contribution in reviewing Electric Power Systems Research (Elsevier), December, 2017.

VISITING POSITIONS

- 2006: Academic visitor at The School of Electrical and Electronic Engineering of the University of Manchester – Research Group of prof. J.V. Milanovic.
- 2019: Lecturer of short courses on voltage regulation and electric vehicles at the University of Manchester

EDITORIAL EXPERIENCES AND ORGANIZATION

- Associate Editor of the international journal: “Electrical Engineering”, ISSN: 0948-7921 (print version), ISSN: 1432-0487 (electronic version)
- Editorial board member of the international journal: The Open Electrical & Electronic Engineering Journal”, ISSN: 1874-1290
- Editorial board member of the international journal: Journal of Electrical and Computer Engineering”, ISSN: 2090-0147
- Editorial board member of the international journal: "International Journal on Power System Optimization", ISSN: 0975-458X
- Organizer of the Summer School on Smart Grids (7 editions – from 2014 to 2022), at University of Salerno
- Member of technical program committee of several power system conferences, the most recent:
- The "International Conference on Artificial Intelligence in Renewable Energetic Systems 2017"
- "The 3rd International Conference on Power System Analysis, Control & Optimization 2017"
- ENERGY 2018 "The Eighth International Conference on Smart Grids, Green Communications and IT Energy-aware Technologies"
- "The 2nd International Conference on Artificial Intelligence in Renewable Energetic Systems 2018"

REVIEWER ACTIVITY

Reviewer for many IEEE journals and magazines, and other international scientific journals (since 2002), among which: IEEE Transactions on Power Systems (ISSN: 1558-0679), IEEE Transactions on Smart Grid (ISSN: 1949-3053), IEEE Transactions on Power Delivery (ISSN:

0885-8977), IEEE Transactions on Industrial Electronics (ISSN: 0885-8977), IEEE Transaction on Industrial Informatics (ISSN: 1551-3203), IEEE Access (ISSN 2169-3536), IEEE Power and Energy Technology Systems Journal (ISSN: 2332-7707), IEEE Transactions on Energy Conversion (ISSN: 0885-8969), IEEE Transactions on Sustainable Energy, IEEE Systems Journal (ISSN: 1932-8184), IET Generation Transmission and Distribution (ISSN: 1751-8687), Electric Power System Research (ISSN: 0378-7796), Applied Energy (ISSN: 0306-2619), International Journal of Electrical Power and Energy Systems (ISSN: 0142-0615), Sustainable Energy, Grids and Networks (ISSN: 2352-4677), Control Engineering Practice (ISSN: 0967-0661), Energy (ISSN: 0360-5442).

ACADEMIC MANAGEMENT ACTIVITY

- 2020 – present: Member of the PhD Council *Innovative Engineering Technologies for Industrial Sustainability*
- 2020 – present: Member of the Council of Department of Industrial Engineering of University of Salerno
- 2020 – present: Scientific coordinator of laboratory activities and research, laboratory of Smart Grids and Distributed Energy Resources
- 2021 – present: Member of the commission of training internships in the Department of Industrial engineering
- 2020 – 2022: Support to the Rector’s delegate in the care of instrumental resources
- 2015 – present: Representative of University of Salerno in TRAIN Consortium
- 2021 – 2022: Coordinator of projects for transversal skills and orientation – Secondary school and University