



# **UNIVERSITÀ DEGLI STUDI DELL'AQUILA**

**Prof. Maria Gabriella Cimatori**

## **Curriculum scientifico**

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Maria Gabriella Cimatori received the M.S. degree in Mathematics in 1989 from the University of L'Aquila with score 110/110 cum laude. After graduation she attended the post-graduate Inter-University School of Perugia and the CNR Computational Mathematics School in Naples. From 1994 she is Researcher in Numerical Analysis at University of L'Aquila where she teaches Numerical Analysis and Mathematics Complements.

Research activities have been mostly devoted to new spline operators for approximation of functions, for numerical evaluation of Cauchy principal value integrals and for numerical solution of integro-differential equations. Her current research interests are new analytical and numerical methods for modulation algorithms applied to multilevel converters. She is author and co-author of papers published in international journals or in proceedings of international conferences.

In 2018, a paper presented in Japan at the sixth International Conference on Smart Grids (ICSG) of which she is co-author, received the award for the best paper.

She has been member of the Phd Committee on "Systems and methods for the management of electrical and thermal energy from renewable and assimilated sources and for sustainable building" of DISIM Department of University of L'Aquila in 2012 and in 2013.

She is a reviewer for some international journals, between them IEEE Transactions on Industrial Electronics. She has been co-organizer (publicity chair) of 5th International Symposium on Environment Friendly Energies and Application (EFEA 2018) in Rome. In 2016 she has been co-organizer (publication co-chair) of 42th Annual International Conference of the IEEE Industrial Electronics Society (IECON 2016 -IEEE-IES) in Florence.

**Journal papers**

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- C. Buccella, C. Cecati, M. G. Cimatorni, Hassan A. Khalid, *Chebyshev Partition Based Modulation Technique Applied to Power Converters*, *IEEE Journal of Emerging and Selected Topics in Power Electronics*, 2018, Early Access Articles.
- C. Buccella, M. G. Cimatorni, M. Tinari, C. Cecati, S. A. Rizzo; G. Susinni; A. Raciti, *Single-Phase Chebyshev Algorithm for Harmonics Mitigation in CHB Five-Level Inverters* 2018 AEIT International Annual Conference, Bari, 3-5 Ottobre 2018.
- C. Buccella; C. Cecati; M.G. Cimatorni; A. Damiano; S. Korjani; M. Porru; A. Serpi, *A Cascade Multilevel Configuration for Commercial Transport Aircraft*, 2018 AEIT International Annual Conference, Bari, 3-5 Ottobre 2018
- M. G. Cimatorni, M. Tinari, C. Buccella, C. Cecati, *A high efficiency Selective Harmonic Elimination technique for multilevel converters*, 2018 International Symposium on Power Electronics, Electrical Drives, Automation and Motion, SPEEDAM 2018, Amalfi, Italy, 20-22 June 2018, p. 673-677.
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- C. Buccella, C. Cecati, M.G. Cimatorni, *Performance analysis and simulation of unbalanced DC sources five level inverter topology*. 2015 International Conference on Renewable Energy and Applications (ICRERA 2015), Palermo, 22-25 Nov. 2015, p. 1152-1156.
- C. Buccella, C. Cecati, M.G. Cimatorni, K. Razi, *An Analytical Method for Pattern Generation in Five-Level Cascaded H-bridge Inverters using Selective Harmonics Elimination*. IEEE Transactions on Industrial Electronics, 2014, Vol. 61, issue 11, p. 5811-5819.
- C. Buccella, C. Cecati, M.G. Cimatorni, K. Razi, *A deterministic harmonics mitigation technique for five-level inverters*. IECON 2014 - 40<sup>th</sup> Annual Conference of the IEEE Industrial Electronics Society, Dallas, 29 Ottobre- 1 Novembre 2014, p. 1007-1013.
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