

# Industry-Academic Forum on EMC 2020

## Academic Participants and Contributions



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### Circuit and Electromagnetic Modeling of EMC Test Setups

In the first part, the talk introduces circuit and electromagnetic models of traditional test setups foreseen by EMC Standards for conducted/radiated immunity verification at unit level, with the objective to provide a deep understanding of the mechanisms of HF noise coupling (by injection and radiation) onto wiring harnesses and interconnects. This background knowledge is exploited in the second part of the talk as pre-requisite for illustrating the rationale and basic principles of innovative test procedures and setups to assess radiated immunity of units and sub-systems. These novel test methods assure equivalence between conducted and radiated susceptibility in terms of common mode RF currents injected in the units under test. Equivalence of the resulting differential modes is therefore obtained as a by-product. It will be shown how these tests could improve repeatability (sometimes difficult at low frequencies), and could lead to time and cost savings when testing is considered from an industrial point of view.

**Flavia Grassi** received the M.Sc. and Ph.D. degrees in electrical engineering from Politecnico di Milano, Milan, Italy, in 2002 and 2006, respectively. She is currently an Associate Professor in the Dept. of Electronics, Information and Bioengineering, Politecnico di Milano. From 2008 to 2009, she was with the European Space Agency (ESA/ESTEC), The Netherlands, as a Research Fellow. Her research interests include distributed-parameter circuit modeling, statistical techniques, characterization of setups for EMC testing (aerospace and automotive sectors), and powerline communications in ac and dc lines. Dr. Grassi received the URSI Young Scientist Award in 2008, and the IEEE Young Scientist Award at the 2016 Asia-Pacific Int. Symp. on EMC (APEMC), the IEEE EMC Society 2016 Transactions Prize Paper Award, and the Best Symposium Paper Awards from the 2015 APEMC and the 2018 Joint IEEE EMC & APEMC Symposium.



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