

# Industry-Academic Forum on EMC 2020

## Academic Participants and Contributions



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### Interference Effects in Complex Wiring Harnesses

Design of complex wiring harness still represents a challenge for EMC engineers since wiring structures are often the main receptors and radiators of interference.

This talk will show examples of analysis of complex wiring structures subjected to far- or near-field coupling with external sources. Modeling will be addressed firstly from the deterministic viewpoint, and then reconsidered from the statistical standpoint by introducing computationally efficiency prediction models accounting for random variations of the noise sources as well as the geometrical/electrical parameters of the wiring harness. Hybrid approaches combining transmission line theory and full-wave simulations will be presented as a trade-off between prediction accuracy and computational time. Also, examples of experimental setups for prediction model validation will be illustrated and discussed.

**Sergio A. Pignari** is a Full Professor of Circuit Theory and Electromagnetic Compatibility (EMC) with Politecnico di Milano, Milan, Italy. He is the author or coauthor of more than 200 papers on field-to-wire coupling and crosstalk, conducted immunity and emissions in multi-wire structures, statistical techniques for EMC prediction, and experimental procedures and setups for EMC testing. Dr. Pignari is co-recipient of the 2005 and 2016 IEEE EMC Society Trans. Prize Paper Award, and a 2011 IEEE EMC Society Technical Achievement Award. He is currently serving as an Associate Editor of the IEEE Trans. on EMC. From 2010 to 2015 he served as the IEEE EMC Society Chapter Coordinator. From 2007 to 2009 he was the Chair of the IEEE Italy Section EMC Society Chapter. He has been Technical Program Chair of the ESA Workshop on Aerospace EMC since 2009, and a Member of the Technical Program Committee of the Asia Pacific EMC Week since 2010.