

**FORMATO EUROPEO
PER IL CURRICULUM
VITAE**



INFORMAZIONI PERSONALI

Nome **GRASSI FLAVIA**
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Nazionalità [REDACTED]
Data di nascita [REDACTED]

ESPERIENZA LAVORATIVA

- Date (da- a) Ottobre 2017 a oggi
• Nome e indirizzo del datore di lavoro Politecnico di Milano, Piazza L. da Vinci, 32, 20133 Milano
• Tipo di azienda o settore Università
• Tipo di impiego Professore associato
• Principali mansioni e responsabilità Insegnamento, Ricerca
- Date (da- a) Dicembre 2008 a Ottobre 2017
• Nome e indirizzo del datore di lavoro Politecnico di Milano, Piazza L. da Vinci, 32, 20133 Milano
• Tipo di azienda o settore Università
• Tipo di impiego Ricercatore Universitario
• Principali mansioni e responsabilità Ricerca, Insegnamento

ISTRUZIONE E FORMAZIONE

- Date (da - a) 2003-2006
• Nome e tipo di istituto di istruzione o formazione Dottorato di Ricerca in Ingegneria Elettrica presso Politecnico di Milano
• Principali materie / abilità professionali oggetto dello studio Compatibilità elettromagnetica, Teoria dei circuiti
• Qualifica conseguita Dottore di Ricerca in Ingegneria Elettrica
• Livello nella classificazione nazionale (se pertinente) NA

- Date (da – a)
- Nome e tipo di istituto di istruzione o formazione
- Principali materie / abilità professionali oggetto dello studio
- Qualifica conseguita
- Livello nella classificazione nazionale (se pertinente)

CAPACITÀ E COMPETENZE

PERSONALI

Acquisite nel corso della vita e della carriera ma non necessariamente riconosciute da certificati e diplomi ufficiali.

MADRELINGUA

ALTRE LINGUA

- Capacità di lettura
- Capacità di scrittura
- Capacità di espressione orale

CAPACITÀ E COMPETENZE

RELAZIONALI

Vivere e lavorare con altre persone, in ambiente multiculturale, occupando posti in cui la comunicazione è importante e in situazioni in cui è essenziale lavorare in squadra (ad es. cultura e sport), ecc.

CAPACITÀ E COMPETENZE

ORGANIZZATIVE

Ad es. coordinamento e amministrazione di persone, progetti, bilanci; sul posto di lavoro, in attività di volontariato (ad es. cultura e sport), a casa, ecc.

CAPACITÀ E COMPETENZE

TECNICHE

Con computer, attrezzature specifiche, macchinari, ecc.

CAPACITÀ E COMPETENZE

ARTISTICHE

Musica, scrittura, disegno ecc.

ALTRE CAPACITÀ E COMPETENZE

Competenze non precedentemente indicate.

PATENTE O PATENTI

1997-2002

Corso di Laurea in Ingegneria Elettrica presso Politecnico di Milano

Teoria dei circuiti, Sistemi elettrici di potenza, Macchine elettriche, Misure elettriche ed elettroniche, automazione industriale

Dottore in Ingegneria Elettrica (Laurea)

NA

ITALIANO

INGLESE

eccellente

buono

buono

OTTIME CAPACITÀ E COMPETENZE RELAZIONALI ANCHE IN AMBIENTE MULTICULTURALE, ACQUISITE LAVORANDO IN CONTESTO UNIVERSITARIO IN AMBITO NAZIONALE E INTERNAZIONALE.

BUONE CAPACITÀ E COMPETENZE ORGANIZZATIVE, ACQUISITE LAVORANDO A STRETTO CONTATTO CON STUDENTI E COLLEGHI SIA ITALIANI SIA STRANIERI.

VEDI DOCUMENTO ALLEGATO

NA

VEDI DOCUMENTO ALLEGATO

ULTERIORI INFORMAZIONI

Per referenze:
Prof. Sergio A. Pignari
Dipartimento di Elettronica Informazione e Bioingegneria, Politecnico di Milano
sergio.pignari@polimi.it

ALLEGATI

SI ALLEGA CURRICULUM INERENTE ATTIVITA' DI RICERCA E DI DIDATTICA



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IEEE Member Number: 80642465

Region: 8

Grade: Senior Member

Personal Data

Name: FLAVIA

Surname: GRASSI

Date of birth: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

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1. Curriculum Vitae

Flavia Grassi received the Laurea (Master) and the Ph.D. Degrees in Electrical Engineering from Politecnico di Milano, Milan, Italy, in 2002 and 2006, respectively. Since October 2017, she is an Associate Professor with the Department of Electronics, Information and Bioengineering of the same technical university.

In 2003, she joined the Electromagnetic Compatibility (EMC) research group led by prof. S. A. Pignari, and has been involved in EMC-related research activities, at the beginning as a Ph.D. student (2003-2006), then as a research assistant (2006-2008), and subsequently as an Assistant Professor (2008-2017).

In 2007, she obtained a Post-doctoral Fellowship supported by the European Space Agency (ESA). In the framework of this Partnering/Networking agreement between ESA and Politecnico di Milano, from March 2008 to March 2009 she was with the Electromagnetics and Space Environment Division of the European Space Research and Technology Centre (ESTEC) of the European Space Agency (ESA), Noordwijk, The Netherlands, as a Research Fellow.

Her research interests centre around EMC. Particularly, she works on (a) theoretical and experimental characterization of electromagnetic interference via lumped and distributed circuit modeling, (b) development of innovative test procedures for unit and system-level EMC assessment of avionic, automotive, and railway systems, and (c) EMC issues related to the application of the PLC technology in ac and dc powerlines. She has authored and co-authored more than 95 papers in international journals and conference proceedings.

In 2008, she was awarded the **URSI Young Scientist Award** (*XXIXth URSI General Assembly*, Chicago, Illinois, USA, 9-16 Aug. 2008).

In 2015, she was awarded the **Best Symposium Paper Award** by the 2015 Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC), May 25-29, 2015, Taipei, Taiwan.

In 2016, she received the **IEEE EMC-S Young Scientist Award** for “*outstanding contributions to the modeling and characterization of bulk current injection and mode conversion due to imbalance in distributed-parameter circuits*” from the 2016 Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC), May 18-21, 2016, Shenzhen, China.

In 2016, she received the **Best Transactions Paper Award** for the best paper published in 2015 in the **IEEE Transactions on Electromagnetic Compatibility** (i.e., the 2016 Richard B. Schulz Best Paper Award).

In 2015, 2016, 2017, and 2018 she was awarded the title of **Distinguished Reviewer of the IEEE Transactions on Electromagnetic Compatibility** for her serving as reviewer for the years 2014, 2015, 2016, and 2017.

In 2015, she spent a one-month period as **Invited Professor** (Feb. 22–28 & June 14–July 3, 2015) with the Institute Pascal, Polytech Clermont-Ferrand, Clermont-Ferrand, France.

Since 2007, she is Member of the IEEE EMC Society, and for the two-year term 2008-2009, she served as Treasurer of the IEEE EMC-S Italy Chapter. Since Sept. 2017, she is an Individual Member of the International Union of Radio Science (URSI).

In 2013, she was elevated to the IEEE Senior Member grade.

She is currently serving as Vice-Chair (and Secretary) of the IEEE EMC-S Technical Committees TC 7 "Low-frequency EMC". Additionally, she is a member of the IEEE EMC-S Special Committee SC 7 "Aeronautics and Space EMC".

2. Teaching Activity

At Politecnico di Milano

Dr. Grassi has taught and teaches courses of Circuit Theory (lectures and training sessions) and Electromagnetic Compatibility (training sessions and laboratories) for Bachelor and Master Degree Programmes in Electrical, Civil, and Environmental Engineering at *Politecnico di Milano* (POLIMI), Milan, Italy.

Particularly, since the academic year 2009/10 she has taught the course "Elettrotecnica" (8 credits) for the Bachelor and Master Degrees in Civil and Environmental Engineer, with evaluations from the students (on average 200 students/year) well above the average ranking of the School.

Since 2011, she is also engaged in activities related to the organization of the School of Civil and Environmental Engineer, and in 2012, 2013, and 2014 she received special funding in recognition of her contributions to the School.

As responsible for the internationalization of the MSc in Electrical Engineering, she is currently in charge for the Double Master Degree programmes in Electrical Engineering between Politecnico di Milano and the chinese universities Xi'An Jiaotong University (XJTU), Xi'An, P. R. China, and Beihang University, Beijing, P. R. China. The former program is now at its fifth edition, the latter program is at its first edition. The number of involved students, including both Chinese and Italian students, is so far around 80.

She served as supervisor or co-supervisor for several Master students from the Electrical, Civil, and Environmental Engineering Bachelor and Master Degree Programs.

She is currently serving as supervisor for four PhD students, pursuing their PhD in Electrical Engineering at Politecnico di Milano:

- Ing. Nicola Toscani, XXXI cycle,
- Ing. Xinglong Wu, XXXII cycle,
- Ing. Xiaokang Liu, XXXIII cycle,
- Ing. Enrico Mazzola, XXXIII cycle (Executive PhD student with Schaffner, Switzerland).

In Foreign Universities

In 2013, 2014, 2015 she taught the course “Electromagnetic Compatibility” (20 hours), for the Master Degree in Electrical Engineering at *Ecole Supérieure d’Ingénieurs en Génie Électrique* (ESIGELEC), Rouen, France.

In 2014, 2015, 2016 and 2017 she was co-professor (15-18 hours) of the course “Frontiers of EMC” for Master and Ph.D. Degrees in Electrical Engineering at Xi’An Jiaotong University (XJTU), Xi’An, Shaanxi Province, P. R. China.

Refresher Courses for Industries

In March 2011, she taught a course of circuit theory for engineers and technicians of “Rold elettrotecnica S.r.l.”, Nerviano, Milano.

In October-November 2012, she taught an advanced course of electromagnetic compatibility (with focus on PCB design and automotive applications) for design engineers of Vimercati S.p.a, Pero, Italy.

3. Research Activity

Most Relevant Technical Contributions/Achievements

Flavia has mainly contributed to: (a) the theory and practice of the bulk current injection (BCI) technique for susceptibility assessment of wiring harnesses; (b) deterministic and statistic modeling of wiring interconnections; (c) channel characterization and EMC assessment of the Powerline Communications (PLC) technology onboard satellites; (d) development of innovative test procedures for radiated susceptibility verification.

a. Contributions to the theory and practice of BCI and modeling of injection devices

In this framework, she developed circuit and electromagnetic models (and related experimental procedures for model-parameter identification) of BCI probes and injection setups for conducted susceptibility verification of wiring harnesses. With respect to the models previously available in the literature, the proposed models have the ability to represent the behavior of BCI probes in a wider frequency interval (i.e., up to the maximum frequency foreseen by BCI Standards), since the proposed procedures of characterization has the potential to correctly account for the frequency-dependent response of the probe ferrite core.

These models were subsequently extended to the practical-relevant case of injection setups involving multi-wire cable bundles, and implemented into simulation environments well-known in the EMC Community such as MATLAB, SPICE, and CST Microwave Studio.

These models gained attention especially from researchers working in the automotive and aerospace sector (where the BCI technique is widely used), and contributed to understand theoretical foundations of BCI. Moreover, they can be fruitfully exploited to increase test significance and effectiveness, as they provide insight to strengthen the correlation between BCI and other susceptibility testing techniques. Additionally, they represent time- and cost-effective tools for the EMC-oriented design of complex systems.

The same approach was recently applied also for the modeling of other injection devices currently foreseen by International Standards for conducted immunity testing, such as electromagnetic clamps and tubular wave couplers.

In this research context, she was awarded the URSI Young Scientist Award for the paper: F. Grassi, F. Marliani, and S. A. Pignari, “SPICE modeling of BCI probes accounting for the frequency-dependent behavior of the ferrite core,” in *Proc. XIXth General Assembly of International Union of Radio Science (U.R.S.I.)*, Chicago, IL, USA, Aug. 7-16, 2008, Commission E, Paper E07.6.

b. Deterministic and statistical modeling of wiring structures

In this framework, she works at the development of deterministic and statistical models, based on Transmission Line (TL) theory, for the prediction of radiated immunity, radiated and conducted emissions of systems involving multi-wire interconnections.

Main contributions can be briefly summed up as follows.

1) Circuit modeling of the mode-conversion occurring in unbalanced differential lines. By recognizing the dominant differential-mode (DM) nature of signal transmission on differential line circuits, the concept of weak imbalance was introduced as the counterpart in the modal domain of the well-known weak-coupling assumption exploited for crosstalk analysis. This allowed providing a circuit interpretation of the mode conversion responsible for the generation and propagation of undesired common-mode (CM) currents in terms of controlled sources 1) distributed along the length of the equivalent CM line, if representative for asymmetries and nonuniformity owing to manufacturing variability and affecting the line cross-section, or 2) lumped at the terminations of the equivalent CM line, if representative for the imbalance affecting the terminal sections. The model was eventually extended to the practically-relevant case of adjacent differential lines printed on the same PCB, with the objective to evidence crosstalk and mode conversion mechanisms occurring in these structures due to the effect of proximity, even in the absence of actual asymmetries affecting the line cross-section and/or the terminal networks.

2) Radiated susceptibility models of complex cable bundles. In this framework, computational-efficient models for predicting the radiated susceptibility of complex cable harnesses were developed. Specific features of these models are the following. First, the possibility to efficiently account for random variations of EM-field characteristics and/or geometrical/electrical parameters of the cable harness, so to get statistical estimates in terms of mean value and standard deviation of the noise induced at the terminal units. Second, the possibility to efficiently predict the radiated susceptibility of complex cable harnesses immersed in highly non-uniform EM fields, such as those in resonating environments, avoiding the computational burden involved in repeated full-wave 3D numerical simulation of the whole test setup. To this end, a hybrid “numerical-TL theory” method was exploited, which combines a stochastic TL-based model of the random bundle with the results of preliminary full-wave simulations, aimed at evaluating the electromagnetic field inside the resonating environment. The method was applied to the case of a random bundle of unshielded twisted-wire pairs installed into a satellite mockup, and lead to statistical estimates consistent with those obtained by measurement on several bundle samples.

3) Information leakage. In this framework, the possibility to eavesdrop information from differential interconnects by resorting to time-domain crosstalk in the terminations of sensing loop(s) placed in close proximity (as coupling phenomenon exploited to reconstruct the transmitted digital signals) was theoretically explored, and suitable signal processing algorithms were developed to this purpose. The investigation proved that—even though geometrical and electric characteristics of the emitting interconnect are not perfectly known—the original digital signal can be successfully reconstructed.

4) Generation and propagation of conducted emissions (CE) in electrical vehicles. A modelling approach for CE prediction in electric powertrains was proposed, which is based on circuit representation of each single subsystem, that is, the battery, the inverter, the three-phase synchronous motor, and the power buses composed of shielded cables. The proposed models represent both low-frequency functional aspects and high-frequency parasitic effects (of paramount importance for CE analysis), can be implemented into a SPICE-like simulation environment, and, as such, exploited to emulate virtual CE measurements, as well as to investigate the impact of different modulation schemes and setup features, such as propagation (and radiation) along the power bus.

c. EMC issues related to the application of PLC onboard spacecraft

This research was promoted by the Electromagnetics and Space Environment Division of the European Space Research and Technology Centre (ESTEC) of the European Space Agency (ESA), in the framework of a Partnering/Networking Agreement with Politecnico di Milano. The research encompassed both theoretical and experimental aspects, and was aimed at assessing the possible spinning-in of PLC technology onboard spacecraft, where power distribution is achieved by twisted-wire dc power-buses.

Main contributions can be summed up as follows.

1) Channel characterization. (a) Theoretical and experimental characterization of the transmission and noise properties of the PLC channel (i.e., powerline topology, spectral properties and levels of the expected noise); (b) Design of suitable coupling/decoupling networks; (c) Identification of modulation techniques and communication protocols most suited to the purpose.

2) Electromagnetic compatibility. A prototype PLC link was realized and extensively tested in the EMC facilities of ESA/ESTEC, with the objective to verify that: (a) Communication reliability is not jeopardized by the EM noise generated by onboard power electronics (mainly DC/DC converters), and (b) radiation from the powerline does not cause interference in onboard electronic devices and sensitive payloads.

In this research context:

- She obtained a Post-doctoral Fellowship and was with the Electromagnetics and Space Environment Division of ESA/ESTEC from March 2008 to March 2009. Also, she was invited to present the results of her research in international workshops/meetings (see next Section);
- She was awarded the Best Symposium Paper Award by the 2015 Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC), for the paper: F. Grassi, G. Spadacini, S. A. Pignari "Effects of imbalance on conducted immunity of a PLC link onto a DC power-bus for spacecraft," in *Proc. APEMC 2015, Asia-Pacific Int. Symp. on Electromagn. Compat.*, Taipei, Taiwan, May 25-29, 2015, pp. 1-4.

d. Innovative test procedures and setups for radiated susceptibility (RS) verification

This research deals with the development of alternative radiated susceptibility (RS) test procedures aimed at pre-compliance assessment of the immunity of units and sub-systems to be assembled in complex/embedded systems, e.g., avionics and automotive sectors. In this framework, a critical aspect is usually related to the RS of interconnecting cables, i.e., to harness ability to pick-up EM interference and to carry it at the input of the terminal units. The traditional RS procedures foreseen by International Standards resort to quite large and expensive test facilities (such as anechoic chambers, TEM and GTEM cells), whose use—although justified for full-compliance verification—is often not acceptable in terms of time and costs as far as pre-compliance testing is the target. To overcome these limitations, two families of test-bench alternative procedures are currently under study. The first one makes use of injection devices currently foreseen in EMC Standards for conducted susceptibility verification (e.g., the possible use of BCI probes, electromagnetic clamps, tubular wave couplers is currently under investigation). The second one exploits crosstalk.

These procedures are aimed at assuring high correlation (i.e., equivalence in exact or approximate/statistical terms) with the interference levels due to direct radiation of the system under test, and allow the user to carry out the test on the test bench. Hence, they can be conveniently used at the early design stage of complex systems, as they allow the designer to clearly identify possible reasons for non-compliance, and to fix susceptibility problems prior to assembly the sub-system under test in the whole vehicle.

Significant contributions in this field regard:

1) Theoretical development and experimental assessment of RS test procedures based on the use of one or two BCI probes. The proposed procedures allow testing both unshielded and shielded cable harnesses, and can assure high correlation with field-to-wire coupling effects at the terminations of the wiring structure under test. Particularly, procedures resorting to the use of two BCI probes assure exact reproduction of radiation effects but require an a priori knowledge of the common mode impedance of the terminal units. Conversely, procedures resorting to a single BCI probe overcome such a limitation by enforcing the equivalence with radiation in statistical terms.

2) Development of a test procedure and setup exploiting crosstalk. The proposed procedure resorts to the use of an additional wire running in close proximity to the harness under test and fed from the terminations by two synchronized RF generators. It allows achieving exact equivalence with field-to-wire coupling for whatever terminations (linear and non linear) of the victim circuit, as well as for whatever condition of incidence of the incident EM field.

Part of this research line was supported by the European Space Agency (ESA) in the framework of a project carried out in partnership with Airbus Defence and Space, Toulouse, France.

Invited Seminars/Speeches in International Workshops/Meetings

2008/11/04 In the *International Meeting on Powerline Communications for—but not limited to—Automotive*, organized by Pavia University, Pavia, Italy, in cooperation with the IEEE EMC-S Italy Chapter, she gave the presentation:

- F. Grassi, S. A. Pignari, "PLC on spacecraft power buses—EMC issues."
- 2009/01/15** In the *CST Workshop—3D EM Simulation of SI & EMC/EMI problems*, held during the 20th Int. Zurich Symp. on Electromagn. Compat., Zurich, Switzerland, Jan. 12-16, 2009, she gave the presentation:
F. Grassi, S. A. Pignari, "Characterization of injection probes for bulk current injection via CST MWS simulation."
- 2009/06/16** In the workshop *Les courants porteurs en Ligne (PLC) une solution pour la réduction de harnais*, organized by the Centre national d'études spatiales (CNES), Toulouse, France, she gave the presentation:
F. Grassi, "EMC issues related to the application of the PLC technology on spacecraft power buses."
- 2013/10/27** In the IEEE EMC-S Technical Meeting, Xi'an Jiaotong University, Xi'an, P. R. China, she delivered the speech:
F. Grassi, "Bulk current injection: An effective technique for immunity testing."
- 2015/06/24** At Université Blaise Pascal, Clermont-Ferrand, France, she delivered the seminar:
F. Grassi, "Modelling BCI probes towards the development of innovative RS test procedures."
- 2015/07/01** In the workshop *Uncertainty Modeling for ElectroMagnetic Applications (UMEMA 2015)*, Saint-Nectarine, France, June 29th-July 1st, she delivered the invited speech (plenary session):
F. Grassi, "Radiated susceptibility of complex cable harnesses: From deterministic to statistical modeling."
- 2016/05/18** In the workshop *Advances in Automotive EMC Test Techniques*, held during the 7th Asia-Pacific Int. Symp. on Electromagnetic Compatibility and Signal Integrity and Technical Exhibition (APEMC 2016), 18-21 May 2016, Shenzhen, P.R. China, she delivered the invited speech:
F. Grassi, "Alternative approaches to assess the radiated susceptibility of units and sub-systems onboard vehicles."
- 2016/10/21** In the seminar on *Transportation and Power Electronics EMC*, held on the 21st Oct. 2016, Zhejiang University, Hangzhou, P. R. China she delivered the speech:
F. Grassi, "Testing the radiated susceptibility of units and sub-systems onboard vehicles by injection or intentional crosstalk."
- 2017/03/28** In the Compact seminar "*Automotive EMC*" with title: *New Test Methodologies for Full Vehicle and Components (ETS LINDGREN/Politecnico di Milano)* organized during the 2017 International Exhibition with Workshops on Electromagnetic Compatibility (EMV 2017), 28-30 March, 2007, Stuttgart, Germany, she delivered the speech:
F. Grassi, "Innovative test procedures and setups for immunity verification of wiring harness on board vehicles."
- 2017/06/20** At the 2017 Asia-Pacific Int. Symp. on Electromagnetic Compatibility (APEMC 2017), 20-23 June 2017, Seoul, Korea, she delivered the tutorial:

- F. Grassi, "Circuit interpretation of mode conversion in differential-line interconnects under the assumption of weak imbalance." (Tutorial: "SI/PI/EMI Modeling, Simulation, Design and Numerical Methods")
- 2017/06/23** At the *2017 Asia-Pacific Int. Symp. on Electromagnetic Compatibility (APEMC 2017)*, 20-23 June 2017, Seoul, Korea, she delivered the invited talk:
F. Grassi, "Novel and simplified immunity testing methods for automotive applications." (Workshop: "Advances in Automotive EMC Test Techniques")
- 2017/08/07** In the half-day tutorial "Automotive EMC – Updates on Measurement Techniques, Test Methodologies and Product Design" held during the *2017 IEEE Int. Symp. on Electromagnetic Compatibility, Signal and Power Integrity*, Aug. 7-11, 2017, Washington DC, USA, she will deliver the tutorial speech:
F. Grassi, "Susceptibility testing of wiring harness on board vehicles."
- 2017/11/14** In the **CST Automotive Conference**, Audi Forum Neckarsulm, Neckarsulm, Germany, November 14, 2017, she delivered the invited speech:
F. Grassi, "Electromagnetic and circuit simulation of Bulk Current Injection in automotive test setups involving complex wiring harnesses."
- 2017/11/24** In the workshop *Uncertainty Modeling for ElectroMagnetic Applications (UMEMA 2017)*, Turin, Italy, November 23-24, 2017, she delivered the invited speech:
F. Grassi et al., "Probabilistic vs possibilistic approaches for radiated susceptibility modeling: A case study."
- 2018/02/05** In the **IEEE 2018 High Power Electromagnetics Workshop**, Feb. 5th, 2018, EPFL, Lausanne, Switzerland, she delivered the invited speech:
F. Grassi, "Pulsed Current Injection to reproduce intense transient electromagnetic disturbances."
- 2018/05/14** In the Tutorial "Advances in Automotive Test and Measurement," to be held during *2018 Joint IEEE EMC & APEMC Symposium*, 14-17 May 2018, Suntec Convention & Exhibition Center, Singapore, she will deliver the speech:
F. Grassi, "Simulation of Bulk Current Injection Test Setups involving Complex Cable Harnesses."

Conference Organization

- 2015** Member of the International Scientific Committee of the *1st Workshop on Uncertainty Modeling for ElectroMagnetic Applications (UMEMA)*, 29 June-1 July, 2015, Saint-Nectaire, France.
- 2015** Reviewer for the *6th Asia-Pacific Int. Symp. on Electromagnetic Compatibility and Signal Integrity and Technical Exhibition (APEMC 2015)*, May 25-29, 2015, Taipei, Taiwan.
- 2016/05/18** Co-chair of a session of the *Topical Symposium on Smart Grid and Power Electronics EMC*, *7th Asia-Pacific Int. Symp. on Electromagnetic Compatibility and*

- Signal Integrity and Technical Exhibition (APEMC 2016)*, 18-21 May 2016, Shenzhen, P. R. China.
- 2016/10/18** Co-chair of the session *EMC Issues in Electrical Vehicles*, 13th *IEEE Vehicle Power and Propulsion Conference*, 17-20 Oct. 2016, Hangzhou, P. R. China.
- 2016 to date** Secretary of the IEEE EMC-S Technical Committees TC 7 “Low-frequency EMC”.
- 2017 to date** Vice-chair (and Secretary) of the IEEE EMC-S Technical Committees TC 7 “Low-frequency EMC”.
- 2016 to date** Member of the IEEE EMC-S Special Committee SC 7 “Aeronautics and Space EMC”.
- 2016** Reviewer for the 7th *Asia-Pacific Int. Symp. on Electromagnetic Compatibility and Signal Integrity and Technical Exhibition (APEMC 2016)*, 18-21 May 2016, Shenzhen, P. R. China.
- 2017** Co-organizer and co-chair of the Special Session “New EMC challenges in the Smart Grid” held on the 7th of June 2017 during the 17th *IEEE Int. Conf. on Environment and Electrical Eng.*, June 6-9, 2017, Milan, Italy.
- 2017** Co-organizer and co-Chair of the Special Session “New developments in power quality and low frequency EMC”, held during the 2017 *IEEE Int. Symp. on Electromagnetic Compatibility, Signal and Power Integrity*, August 7-11, 2017, Washington DC, USA. (August 10th, 2017)
- 2017** Co-organizer and co-Chair of the Tutorial “Low Frequency Issues” held during the 2017 *IEEE Int. Symp. on Electromagnetic Compatibility, Signal and Power Integrity*, August 7-11, 2017, Washington DC, USA. August 7th, 2017)
- 2017** Member of the Technical program committee of the 21st *IEEE Workshop on Signal and Power integrity (SPI 2017)*, May 7-10 2017, Lake Maggiore (Baveno), Italy.
- 2017/05/10** Chair of the session “Transmission line modeling”, 21st *IEEE Workshop on Signal and Power integrity (SPI 2017)*, May 7-10 2017, Lake Maggiore (Baveno), Italy.
- 2017** Reviewer for the 21st *IEEE Workshop on Signal and Power integrity (SPI 2017)*, May 7-10 2017, Lake Maggiore (Baveno), Italy.
- 2017** Reviewer for the 2017 *IEEE Int. Symp. on Electromagnetic Compatibility, Signal and Power Integrity*, August 7-11, 2017, Washington DC, USA.
- 2017** Reviewer for the 8th *Asia-Pacific Int. Symp. on Electromagnetic Compatibility (APEMC 2017)*, 20-23 June 2017, Seoul, Korea.
- 2017** Reviewer for the 17th *IEEE Int. Conf. on Environment and Electrical Eng.*, June 6-9, 2017, Milan, Italy.
- 2018** Workshop and Tutorial Program Co-Chair for the 2018 IEEE Symposium on Electromagnetic Compatibility and Signal and Power Integrity, 30 July-3 August 2018, Long Beach, CA, USA.
- 2018** Co-Chair of the Topical Meeting (TM4) “EMC in Power Electronics and Smart Grid,” to be held during the 2018 Joint IEEE EMC & APEMC Symposium, 14-17 May 2018, Suntec Convention & Exhibition Center, Singapore.
- 2018** Co-Organizer and Co-Chair of the Special Session (SS7) “Aerospace EMC: Advances in modeling and measurement techniques,” to be held during the 2018 Joint IEEE EMC & APEMC Symposium, 14-17 May 2018, Suntec Convention & Exhibition Center, Singapore.

- 2018** Member of the Technical program committee of the 22nd *IEEE Workshop on Signal and Power integrity* (SPI 2018), May 22-25 2017, Brest, France.
- 2018** Co-Organizer and Co-Chair of the Special Session “Automotive EMC and Electric Vehicles,” to be held during the 2018 IEEE Symposium on Electromagnetic Compatibility and Signal and Power Integrity, 30 July-3 August 2018, Long Beach, CA, USA.
- 2018** Co-Organizer and Co-Chair of the Workshop “EMC for home appliances, including power converters applications,” to be held during the 2018 IEEE Symposium on Electromagnetic Compatibility and Signal and Power Integrity, 30 July-3 August 2018, Long Beach, CA, USA.
- 2018** Reviewer for the 2018 IEEE Symposium on Electromagnetic Compatibility and Signal and Power Integrity, 30 July-3 August 2018, Long Beach, CA, USA.
- 2018** Reviewer for the 2018 Joint IEEE EMC & APEMC Symposium, 14-17 May 2018, Suntec Convention & Exhibition Center, Singapore.
- 2018** Reviewer for the 22nd *IEEE Workshop on Signal and Power integrity* (SPI 2018), May 22-25 2017, Brest, France.

Editorial activity

- 2009 to date** Reviewer of the IEEE TRANS. on ELECTROMAGNETIC COMPATIBILITY, IEEE TRANS. ON IND. INFORMATICS, IEEE TRANS. ON MICROWAVE THEORY AND TECHNIQUES, IEEE Trans. on COMPONENTS, PACKAGING, AND MANUFACTURING, MANUFACTURING, IET ELECTRONICS LETTERS, RADIO SCIENCE, IEEE ACCESS, Wiley Int. Journal of Numerical Modelling: Electronic Networks, Devices and Fields.
- 2016-17** Reviewer of a chapter of the book:
Ray Perez, *Handbook of Aerospace Electromagnetic Compatibility*, Wiley.
- 2017 (Jan)** Associate Editor of IEEE Access
- 2017/18** Member of the editorial board (Guest editor) of the Special Issue on “Advanced Modeling in Stochastic Computational Electromagnetics,” *Journal of Mathematical Problems in Engineering*, Hindawi.

Awards and International Recognitions

- 2008** **URSI Young Scientist Award**, XXIXth URSI General Assembly, Chicago, Illinois, USA, 9-16 Aug. 2008.
- 2013** Elevation to the grade of **IEEE Senior Member**.
- 2015** **Distinguished Reviewer** of the IEEE Transactions on Electromagnetic Compatibility for her serving as reviewer for the year 2014.
- 2015** **Best Symposium Paper Award**, 2015 Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC), May 25-29, 2015, Taipei, Taiwan.

- 2016** **Distinguished Reviewer** of the IEEE Transactions on Electromagnetic Compatibility for her serving as reviewer for the year 2015.
- 2016** **IEEE EMC-S Young Scientist Award** for *outstanding contributions to the modeling and characterization of bulk current injection and mode conversion due to imbalance in distributed-parameter circuits*, 2016 Asia-Pacific International Symposium on Electromagnetic Compatibility (APEMC), May 18-21, 2016, Shenzhen, China.
- 2016** **Best Transactions Paper Award** for the best paper published in 2015 in the IEEE Transactions on Electromagnetic Compatibility (i.e., the 2016 Richard B. Schulz Best Paper Award).
- 2017** **Distinguished Reviewer** of the IEEE Transactions on Electromagnetic Compatibility for her serving as reviewer for the year 2016.
- 2018** **Distinguished Reviewer** of the IEEE Transactions on Electromagnetic Compatibility for her serving as reviewer for the year 2017.

Periods spent in foreign universities/research centers

- 2008/03-2009/03** **Research (post-doctoral) Fellow** with the Electromagnetics and Space Environment Division of the European Space Research and Technology Centre (ESTEC) of the European Space Agency (ESA), Noordwijk, The Netherlands.
- 2015** **Invited Professor** (One-month period: Feb. 22–28 & June 14–July 3, 2015) with the Institute Pascal, Polytech Clermont-Ferrand, Clermont-Ferrand, France.

Supported Research

Dr. Grassi has obtained the following research grants as **principal investigator**:

- 2007** Post-Doctoral Fellowship (18 months) funded by the European Space Agency (ESA contract: 20913/07/NL/GLC, title: **EMC Assessment of PLC & Spread-Spectrum Technology for the Integration of Information and Power in Spacecraft**, period 2007/09).
- 2012** Research fund provided by Politecnico di Milano (F.A.R.B. Funding Program), aimed at supporting the work of selected Researchers on basic research.
- 2017** Research fund provided by State Key Laboratory of Electrical Insulation and Power Equipment-Xi'An Jiaotong University (2017 Opening Project call-approved on March 20, 2017) for the two-year project "Electromagnetic Compatibility prediction models and test procedures for distributed-parameter electronic systems employed in the smart grid".
- 2017** Cooperation agreement with CST Micro-Wave Studio (MWS) for the analysis of the Bulk Current Injection (BCI) technique on complex cable bundles for automotive applications.

Since 2003, she has been engaged as **team member** in several Research Contracts and Grants obtained by the EMC group at Politecnico di Milano. A list of selected projects is provided in the following:

Period: July 2015 – Dec. 2016

Alternative Approaches to Radiated Susceptibility Testing at Unit Level

Research Project funded by European Space Agency (ESA-ESTEC) under Contract 4000112761/14/NL/HK.

Project team: Airbus Defence & Space (prime contractor) and Politecnico di Milano.

Primary investigator at Politecnico di Milano: prof. Sergio A. Pignari

Period: 2012-2013

Modeling of conducted electromagnetic emission of inverters and attached power cables for automotive applications

Research Project funded by HITACHI, Yokohama Research Laboratory, Yokohama, Japan.

Primary investigator: prof. Sergio A. Pignari

Period: 2011-2013

Advanced System Level Radiated Emission Analysis and Simulation for EMC (ARES-EMC)

Technology Research Project funded by the European Space Agency (ESA-ESTEC)

Project team: Carlo Gavazzi Space SpA (prime contractor), Politecnico di Milano, EM Software & Systems-S.A. (Pty) Ltd.

Primary investigator at Politecnico di Milano: prof. Sergio A. Pignari

Period: 2011-2012

Rilievi sperimentali e simulazioni elettromagnetiche dei campi emessi da saldatrici

Project funded by CEA S.p.A. Costruzioni Elettromeccaniche Annettoni

Primary investigator: prof. Sergio A. Pignari

Period: 2010-2012

Monitoring of high-speed railway lines for safety and integrity assessment

Three-Year Inter-University Program for the Development of Research of National Interest (PRIN).

Project Co-Funded (70%) by the Italian Ministry of University and Research.

Project team: Politecnico di Milano (prime contractor), University of L'Aquila, University of Bologna, University of Pisa.

Primary investigator: prof. Sergio A. Pignari

Period: 2008-2010

Advanced System Level Conducted Emission Analysis and Simulation for EMC (SYLENCE Project)

Technology Research Project funded by the European Space Agency (ESA-ESTEC)

Project team: Carlo Gavazzi Space SpA (prime contractor), Politecnico di Milano, TERMA A/S.

Primary investigator at Politecnico di Milano: prof. Sergio A. Pignari

Period: 2005-2006

Bulk Current Injection for Radiated Susceptibility Verification at Unit Level

Project funded by the European Space Agency (ESA-ESTEC)

Primary investigator: prof. Sergio A. Pignari

Period: 2003-2004

Modeling Injection Probes for Bulk Current Injection

Project funded by the European Space Agency (ESA-ESTEC)

Primary investigator: prof. Sergio A. Pignari

4. List of Publications

Refereed Papers in Scientific Journals (reverse chronological order)

- J1. N. Toscani, F. Grassi, G. Spadacini, S. A. Pignari, "Modeling bulk current injection test setups involving complex wiring harnesses," *IEEE Trans. Electromagn. Compat.*, early access article.
- J2. Z. Cui, F. Grassi, S. A. Pignari, B. Wei, "A Pulsed Current Injection setup and procedure to reproduce intense transient electromagnetic disturbances," *IEEE Trans. Electromagn. Compat.*, early access article.
- J3. G. Spadacini, T. Liang, F. Grassi, S. A. Pignari, "Worst case and statistics of waveforms involved in wideband intentional electromagnetic attacks," *IEEE Trans. Electromagn. Compat.*, early access article.
- J4. T. Liang, F. Grassi, G. Spadacini, S. A. Pignari, "Statistical Estimation of Crosstalk through a Modified Stochastic Reduced Order Model Approach," accepted for publication in the *IEICE Trans. Commun.*, vol. E101-B, no.4, Apr. 2018, pp. 1085-1093.
- J5. K. Yuan, F. Grassi, G. Spadacini, S. A. Pignari, "Reproducing field-to-wire coupling effects in twisted-wire pairs by crosstalk," *IEEE Trans. Electromagn. Compat.*, vol. 60, no. 4, Aug. 2018, pp. 991-1000.
- J6. X. Wu, F. Grassi, P. Manfredi, D. Vande Ginste, "Perturbative analysis of differential-to-common mode conversion in asymmetric nonuniform interconnects," *IEEE Trans. Electromagn. Compat.*, vol. 60, no. 1, Feb. 2018, pp. 7-15.
- J7. K. Yuan, F. Grassi, G. Spadacini, S. A. Pignari, "Accounting for wire coating in the modeling of field coupling to twisted-wire pairs," *IEEE Trans. Electromagn. Compat.*, vol. 60, no. 1, Feb. 2018, pp. 284-287.
- J8. S. A. Pignari, G. Spadacini, F. Grassi, "Modeling field-to-wire coupling in random bundles of wires," *IEEE Electromagn. Compat. Magazine*, Vol. 6, Quarter 3, 2017, pp. 85-90.
- J9. N. Toscani, F. Grassi, G. Spadacini, S. A. Pignari, "Transmission line and electromagnetic model of the tubular wave coupler," *IEEE Trans. Electromagn. Compat.*, vol. 59, no. 5, pp. 1592-1600, Oct. 2017.
- J10. L. Badini, G. Spadacini, F. Grassi, S. A. Pignari, "A rationale for statistical correlation of conducted and radiated susceptibility testing in aerospace EMC," *IEEE Trans. Electromagn. Compat.*, vol. 59, no. 5, pp. 1576-1585, Oct. 2017.
- J11. F. Grassi, P. Manfredi, X. Liu, J. Sun, X. Wu, D. Vande Ginste, S. A. Pignari, "Effects of undesired asymmetries and non-uniformities in differential lines," *IEEE Trans. Electromagn. Compat.*, vol. 59, no. 5, pp. 1613-1624, Oct. 2017.
- J12. K. Yuan, F. Grassi, G. Spadacini, S. A. Pignari, "Crosstalk-sensitive loops and reconstruction algorithms to eavesdrop digital signals transmitted along differential interconnects," *IEEE Trans. Electromagn. Compat.*, vol. 59, no. 1, pp. 256-265, Feb. 2017.
- J13. F. Grassi, G. Spadacini, K. Yuan, S. A. Pignari, "Relating crosstalk to plane-wave field-to-wire coupling," *IEICE Trans. Commun.*, vol. E99-B, no.11, pp.2406-2413, Nov. 2016.

- J14. G. Spadacini, F. Grassi, S. A. Pignari, "Modelling and simulation of conducted emissions in the powertrain of electric vehicles," *Progress In Electromagnetics Research B*, Vol. 69, pp. 1-15, 2016. (Online at: <http://www.jpier.org/PIERB/pier.php?volume=69>)
 - J15. N. Toscani, G. Spadacini, F. Grassi, S. A. Pignari, "Lumped and distributed-parameter circuit models of the electromagnetic clamp," *IEEE Trans. Electromagn. Compat.*, vol. 58, no. 4, pp. 1007-1015, Aug. 2016.
 - J16. F. Grassi, L. Badini, G. Spadacini, S. A. Pignari, "Crosstalk and mode conversion in adjacent differential lines," *IEEE Trans. Electromagn. Compat.*, vol. 58, no. 3, pp. 877-886, June 2016.
 - J17. F. Grassi, H. Abdollahi, G. Spadacini, S. A. Pignari, P. Pelissou, "Radiated immunity test involving crosstalk and enforcing equivalence with field-to-wire coupling," *IEEE Trans. Electromagn. Compat.*, vol. 58, no. 1, pp. 66-74, Feb. 2016.
 - J18. G. Spadacini, F. Grassi, D. Bellan, S. A. Pignari, and F. Marliani, "Prediction of conducted emissions in satellite power buses," *Int. Journal of Aerospace Engineering*, vol. 2015, Article ID 601426, 10 pages, 2015.
 - J19. G. Spadacini, F. Grassi, S. A. Pignari, "Field-to-wire coupling model for the common mode in random bundles of twisted-wire pairs," *IEEE Trans. Electromagn. Compat.*, vol. 57, no. 5, pp. 1246-1254, Oct. 2015.
- Paper [J19]: Best Transactions Paper Award for the best paper published in 2015 in the IEEE EMC Transactions.
- J20. F. Grassi, G. Spadacini, S. A. Pignari, F. Marliani, "Combined MTL-fullwave statistical approach for fast estimation of radiated immunity of spacecraft cable assemblies involving multipair bundles," *IEICE Trans. Commun.*, vol. E98-B, no. 07, pp. 1204-1211, Jul. 2015.
 - J21. P. Degauque, I. Stievano, S. Pignari, V. Degardin, F. Canavero, F. Grassi, F. Canete, "Power Line Communication: Channel characterization and modeling for transportation systems," *IEEE Vehicular Technology Magazine*, vol. 10 n. 2, pp. 28-37, 2015.
 - J22. F. Grassi, X. Wu, Y. Yang, G. Spadacini, S. A. Pignari, "Modeling of imbalance in differential lines targeted to SPICE simulation," *Progress In Electromagnetics Research B*, vol. 62, pp. 225-239, 2015. (Online at: <http://onlinewww.jpier.org/pierb/pier.php?paper=15012304>)
 - J23. F. Grassi, Y. Yang, X. Wu, G. Spadacini, S. A. Pignari, "On mode conversion in geometrically-unbalanced differential lines and its analogy with crosstalk," *IEEE Trans. Electromagn. Compat.*, vol. 57, no. 2, pp. 283-291, April 2015.
 - J24. G. Spadacini, F. Grassi, F. Marliani, S. A. Pignari, "Transmission-line model for field-to-wire coupling in bundles of twisted-wire pairs above ground," *IEEE Trans. Electromagn. Compat.*, vol. EMC-56, no. 6, pp. 1682-1690, Dec. 2014.
 - J25. F. Grassi, G. Spadacini, and S. A. Pignari, "SPICE behavioral modeling of RF current injection in wire bundles," *IEICE Trans. Commun.*, vol. E97-B, no. 2, pp. 424-431, Feb 2014.
 - J26. F. Grassi, G. Spadacini, and S. A. Pignari, "The concept of weak imbalance and its role in the emissions and immunity of differential lines," *IEEE Trans. Electromagn. Compat.*, vol. EMC-55, no. 6, pp. 1346-1349, Dec. 2013.
 - J27. F. Grassi, S. A. Pignari, "Bulk current injection in twisted-wire pairs with not perfectly balanced terminations," *IEEE Trans. Electromagn. Compat.*, vol. 55, no. 6, pp. 1293-1301, Dec. 2013.

- J28. F. Grassi and S. A. Pignari, "Immunity to conducted noise of data transmission along DC power lines involving twisted-wire pairs above ground," *IEEE Trans. Electromagn. Compat.*, vol. 55, no. 1, pp. 195-207, Feb. 2013.
- J29. F. Grassi, S. A. Pignari, J. Wolf, "Channel characterization and EMC assessment of a PLC system for spacecraft DC differential power buses," *IEEE Trans. Electromagn. Compat.*, vol. 53, no. 3, pp. 664 - 675, Aug. 2011.
- J30. F. Grassi, S. A. Pignari, "Upper bound and dispersion of the outdoor powerline channel frequency-response," *IEICE Trans. on Communications*, vol. E93-B, no. 7, pp. 1814-1820, July 2010.
- J31. F. Grassi, G. Spadacini, F. Marliani, and S. A. Pignari, "Use of double bulk current injection for susceptibility testing of avionics," *IEEE Trans. Electromagn. Compat.*, vol. 50, no. 3, part 1, pp. 524-535, Aug. 2008.
- J32. F. Grassi, F. Marliani, and S. A. Pignari, "Circuit modeling of injection probes for bulk current injection," *IEEE Trans. Electromagn. Compat.*, vol. EMC-49, no. 3, pp. 563-576, Aug. 2007.
- J33. S. A. Pignari and F. Grassi, "Crosstalk-based radiated susceptibility test," *Electronics Letters*, Vol. 40, Issue: 22, 28 Oct. 2004, pp. 1398-1399.

Refereed Conference Papers (reverse chronological order)

- C1. X. Wu, F. Grassi, S. A. Pignari, P. Manfredi, D. Vande Ginste, "Circuit interpretation and perturbative analysis of differential-to-common mode conversion due to bend discontinuities," in *Proc. 2017 IEEE Electrical Design of Advanced Packaging & Systems (EDAPS) Symp.*, Haining, Hangzhou, China, Dec. 14-16, 2017.
- C2. T. Liang, G. Spadacini, F. Grassi, S. A. Pignari, "Crosstalk-based radiated susceptibility test enforcing worst-case conditions and quantified overtesting margin," in *Proc. 2017 IEEE 5th International Symp. on Electromagn. Compat. (EMC-Beijing)*, Beijing, Oct. 28-31, 2017.
- C3. X. Wu, F. Grassi, P. Manfredi, G. Spadacini, D. Vande Ginste, S. A. Pignari, "Fast and accurate statistical estimation of common mode voltages and currents in weakly non-uniform differential interconnects," in *Proc. XXXIIth General Assembly of International Union of Radio Science (U.R.S.I.)*, Montreal, Canada, Aug. 19-26, 2017, Commission E.
- C4. L. Badini, G. Spadacini, F. Grassi, S. A. Pignari, P. Bisognin, P. Pelissou, "Experimental assessment of over-testing probability in bulk current injection as an alternative test procedure to radiated susceptibility verifications," in *Proc. XXXIIth General Assembly of International Union of Radio Science (U.R.S.I.)*, Montreal, Canada, Aug. 19-26, 2017, Commission E.
- C5. N. Toscani, F. Grassi, G. Spadacini, S. A. Pignari, "Evaluation of the tubular wave coupler model parameters for setups involving wires," in *Proc. 2017 IEEE Int. Symp. on Electromagn. Compat., Signal and Power Integrity*, Aug. 7-11, 2017, Washington DC, USA, pp. 81-85.
- C6. L. Badini, N. Toscani, G. Spadacini, F. Grassi, S. A. Pignari, "A possibilistic approach to radiated susceptibility of twisted-wire pairs," in *Proc. 2017 IEEE Int. Symp. on Electromagn. Compat., Signal and Power Integrity*, Aug. 7-11, 2017, Washington DC, USA, pp. 96-101.
- C7. P. DeRoy, A. Barchanski, C. Rostamzadeh, C. Jones, R. Frost, M. Grobosky, C. Englefield, F. Grassi, S. A. Pignari, "Bulk current injection assessment of automotive remote keyless entry

- systems,” in *Proc. 2017 IEEE Int. Symp. on Electromagn. Compat., Signal and Power Integrity*, Aug. 7-11, 2017, Washington DC, USA, pp. 660-664.
- C8. X. Wu, F. Grassi, X. Liu, J. Sun, S. A. Pignari, P. Manfredi, D. Vande Ginste, “Generation of common mode in non-uniform differential interconnections,” in *Proc. 8th Asia-Pacific Int. Symp. on Electromagnetic Compatibility (APEMC 2017)*, Seoul, South Korea, 20-23 June 2017, pp. 256-258.
 - C9. K. Yuan, F. Grassi, G. Spadacini, S. A. Pignari, “Robustness analysis of crosstalk-based hardware Trojans and relevant algorithms to nonideal positioning”, in *Proc. 8th Asia-Pacific Int. Symp. on Electromagnetic Compatibility (APEMC 2017)*, Seoul, South Korea, 20-23 June 2017, pp. 53-55.
 - C10. L. Wan, Y. Chen, Y. Yin, Y. Cheng, F. Grassi, S. A. Pignari, “Multi-physics modelling and optimized design of asymmetric integrated optical sensor for electromagnetic pulse measurement,” in *Proc. 17th IEEE Int. Conf. on Environment and Electrical Eng., Milan, Italy, June 6-9, 2017*.
 - C11. P. Manfredi, X. Wu, F. Grassi, D. Vande Ginste, S. A. Pignari, “A perturbative approach to predict eye diagram degradation in differential interconnects subject to asymmetry and nonuniformity,” in *Proc. 21st IEEE Workshop on Signal and Power Integrity (SPI 2017)*, Lake Maggiore (Baveno), Italy, May 7-10 2017, pp. 1-4.
 - C12. G. Spadacini, F. Grassi, S. A. Pignari, “Generation and propagation of radio frequency noise currents in the powertrain of electric vehicles,” in *Proc. 13th IEEE Vehicle Power and Propulsion Conference*, Hangzhou, P. R. China, Oct. 17-20, 2016, pp. 1-4.
 - C13. F. Grassi, S. A. Pignari, G. Spadacini, P. Bisognin, P. Pelissou, S. Marra, “Radiated susceptibility test procedure and setup exploiting crosstalk,” in *Proc. 2016 ESA Workshop on Aerospace EMC*, Valencia, Spain, May 23-25, 2016, pp. 1-4.
 - C14. L. Badini, F. Grassi, S. A. Pignari, G. Spadacini, P. Bisognin, P. Pelissou, S. Marra, “Conducted-susceptibility testing as an alternative approach to unit-level radiated-susceptibility verifications,” in *Proc. 2016 ESA Workshop on Aerospace EMC*, Valencia, Spain, May 23-25, 2016, pp. 1-5.
 - C15. F. Grassi, S. A. Pignari, G. Spadacini, N. Toscani, P. Pelissou, “Characterization of the IEC 61000-4-6 electromagnetic clamp for conducted-immunity testing,” in *Proc. 2016 ESA Workshop on Aerospace EMC*, Valencia, Spain, May 23-25, 2016, pp. 1-4.
 - C16. Z. Cui, F. Grassi, S. A. Pignari, “Circuit modeling of the test setup for pulsed current injection,” in *Proc. APEMC 2016, Asia-Pacific Int. Symp. on Electromagn. Compat.*, Shenzhen, P. R. China, May 18-21, 2016, pp. 726-728.
 - C17. L. Badini, F. Grassi, G. Spadacini, S. A. Pignari, “Sensitivity analysis of proximity effects in nearby differential lines,” in *Proc. APEMC 2016, Asia-Pacific Int. Symp. on Electromagn. Compat.*, Shenzhen, P. R. China, May 18-21, 2016, pp. 717-719.
 - C18. F. Grassi, S. A. Pignari, G. Spadacini, N. Toscani, P. Pelissou, “Behavioral modeling of tubular wave coupler,” in *Proc. APEMC 2016, Asia-Pacific Int. Symp. on Electromagn. Compat.*, Shenzhen, P. R. China, May 18-21, 2016, pp. 720-722.
 - C19. L. Badini, F. Grassi, G. Spadacini, S. A. Pignari “Sensitivity of mode conversion in geometrically-unbalanced coupled differential lines,” in *Proc. ICEAA 2015, Int. Conf. on Electromagnetics and Advanced Applications*, Torino, Italy, Sep. 7-11, 2015, pp. 1361-1364.

- C20. A. F. Finizio, F. Grassi, G. Spadacini, R. Colombo, S. A. Pignari "De-embedding setup-related effects to characterize coupling devices for conducted immunity testing," in *Proc. ICEAA 2015, Int. Conf. on Electromagnetics and Advanced Applications*, Torino, Italy, Sep. 7-11, 2015, pp. 1369-1372.
- C21. G. Spadacini, F. Grassi, S. A. Pignari, "Statistical properties of low frequency voltages induced by a plane-wave field across the terminal loads of a random wire-bundle," in *Proc. Joint IEEE Int. Symp. on Electromagn. Compat. and EMC Europe*, Dresden, Germany, Aug. 16-22, 2015, pp. 824-829.
- C22. F. Grassi, G. Spadacini, S. A. Pignari, "Time-domain response of bulk current injection probes to impulsive stress waveforms," in *Proc. Joint IEEE Int. Symp. on Electromagn. Compat. and EMC Europe*, Dresden, Germany, Aug. 16-22, 2015, pp. 843-848.
- C23. F. Grassi, G. Spadacini, S. A. Pignari "Effects of imbalance on conducted immunity of a PLC link onto a DC power-bus for spacecraft," in *Proc. APEMC 2015, Asia-Pacific Int. Symp. on Electromagn. Compat.*, Taipei, Taiwan, May 25-29, 2015, pp. 1-4.
- Paper [C23]: Best Symposium Paper Award from the 2015 Asia-Pacific Int. Symp. on Electromagn. Compat. (APEMC), May 25-29, 2015, Taipei, Taiwan.
- C24. G. Spadacini, F. Grassi, S. A. Pignari "Statistical estimation of the electromagnetic noise induced by field-to-wire coupling in random bundles of twisted-wire pairs," in *Proc. APEMC 2015, Asia-Pacific Int. Symp. on Electromagn. Compat.*, Taipei, Taiwan, May 25-29, 2015, pp. 1-4.
- C25. G. Spadacini, F. Grassi, S. A. Pignari "SPICE simulation in time-domain of the CISPR 25 test setup for conducted emissions in electric vehicles," *accepted for presentation*, in *Proc. APEMC 2015, Asia-Pacific Int. Symp. on Electromagn. Compat.*, Taipei, Taiwan, May 25-29, 2015, pp. 1-4.
- C26. F. Grassi, G. Spadacini, S. A. Pignari, C. Rostamzadeh "On the use of bulk current injection for testing the immunity of CAN-bus lines," in *Proc. 3rd IEEE Int. Conf. on Connected Vehicles and Expo (ICCVE 2014)*, Messe Wien, Vienna, Austria, Nov. 3-7, 2014, pp.1-6.
- C27. A. Beltramelli, F. Grassi, G. Spadacini, S. A. Pignari, "Modeling conducted noise propagation along high-voltage DC power buses for electric vehicle applications," in *Proc. 3rd IEEE Int. Conf. on Connected Vehicles and Expo (ICCVE 2014)*, Messe Wien, Vienna, Austria, Nov. 3-7, 2014, pp.1-6.
- C28. D. Bellan, G. Spadacini, F. Grassi, S. A. Pignari, "Measurement and modeling of low-frequency electromagnetic noise generated by moving trains in 25 kV ac high-speed railway lines," in *Proc. 3rd IEEE Int. Conf. on Connected Vehicles and Expo (ICCVE 2014)*, Messe Wien, Vienna, Austria, Nov. 3-7, 2014, pp.1-6.
- C29. Y. Yang, X. Wu, F. Grassi, G. Spadacini, S. A. Pignari, "Upper-bounds to the near- and far-end conversion loss in unbalanced differential lines," in *Proc. 2014 Asia-Pacific Microwave Conf. (APMC)*, Sendai, Japan, Nov. 4-7, 2014, pp. 393-395.
- C30. G. Spadacini, F. Grassi, S. A. Pignari, "Influence of load imbalance on noise induced in a twisted-wire pair illuminated by a random plane-wave spectrum," in *Proc. 2014 Asia-Pacific Microwave Conf. (APMC)*, Sendai, Japan, Nov. 4-7, 2014, pp. 73-75.
- C31. G. Spadacini, F. Grassi, S. A. Pignari, "A closed-form low-frequency statistical model for field-to-wire coupling in twisted-wire pairs with non-ideal twisting," in *Proc. XXXIth General*

Assembly of International Union of Radio Science (U.R.S.I.), Beijing, P. R. China, Aug. 16-23, 2014, Commission E, Paper E09.7.

- C32. X. Wu, Y. Yang, F. Grassi, G. Spadacini, S. A. Pignari, "Statistical characterization of line-imbalance in differential lines," in *Proc. XXXIth General Assembly of International Union of Radio Science (U.R.S.I.)*, Beijing, P. R. China, Aug. 16-23, 2014, Commission E, Paper E05.2, pages 1-4. ISBN 978-1-4673-5225-3/14.
- C33. G. Spadacini, F. Grassi, S. A. Pignari, F. Marliani, "Frequency-response variability of voltages induced by field-to-wire coupling in random bundles of twisted-wire pairs on-board small satellites," in *Proc. XXXIth General Assembly of International Union of Radio Science (U.R.S.I.)*, Beijing, P. R. China, Aug. 16-23, 2014, Commission E, Paper E02.2.
- C34. F. Grassi, G. Spadacini, S. A. Pignari, F. Marliani, "Sensitivity to setup configuration of the response of differential lines driven by an external field," in *Proc. 2014 IEEE Int. Symp. on Electromagn. Compat.*, Tokyo, Japan, May 12-16, 2014, pp. 852-855.
- C35. F. Grassi, C. Rostamzadeh, P. Kolbe, G. Spadacini, S. A. Pignari, "Assessing linearity of injection probes used in BCI test setups for automotive applications," in *Proc. 2013 Int. Symp. on Electromagn. Compat.*, Denver, CO, USA, Aug. 5-9, 2013, pp. 129-133.
- C36. G. Spadacini, F. Grassi, and S. A. Pignari, "On the combined effect of random nonuniformity and deformation of twisting on the radiated immunity of twisted-wire pairs," in *Proc. 2013 IEEE Int. Symp. on Electromagn. Compat.*, Denver, CO, USA, Aug. 5-9, 2013, pp. 489-493.
- C37. F. Grassi, C. Rostamzadeh, D. Bellan, G. Spadacini, S. A. Pignari, "Assessment of the bulk current injection test procedure based on the substitution method," in *Proc. APEMC 2013, Asia-Pacific Int. Symp. on Electromagn. Compat.*, Melbourne, Australia, May 20-23, 2013, pp. 418-421.
- C38. D. Bellan, G. Spadacini, F. Grassi, E. Fedeli, S. A. Pignari, "Modeling strategies for conducted and radiated emissions in high-speed railway lines," in *Proc. APEMC 2010, Asia-Pacific Int. Symp. on Electromagn. Compat.*, Melbourne, Australia, May 20-23, 2013, pp. 288-291.
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Milan, April 18th 2018

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