

Guest Editorial

THE Conference on Precision Electromagnetic Measurements (CPEM) 2014 was held at Windsor Barra Hotel in Rio de Janeiro, Brazil, from August 24 to August 29, 2014 (<http://www.inmetro.gov.br/cpem2014>). Experts working in the field of precision metrology and its applications to real-world situations gathered to present and discuss recent advances and open issues/questions.

The authors of the 396 presentations given at the conference (172 oral and 224 poster presentations) were invited to submit their extended papers for consideration for publication in the CPEM 2014 Special Issue of the IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT. The extended paper submission was open from August 10 to August 26, 2014.

All papers were submitted electronically using the AllenTrack System for paper management, as for previous conferences. There were 119 extended papers submitted, which were subjected to peer reviews by two or more experts in the field. The reviewers were asked to evaluate the papers as per criteria for regular IEEE Transaction papers. In the end, 72 papers were accepted for publication in the Special Issue.

For CPEM 2014, the submission process worked well. The hours of operation of the Editorial Office at the conference were from 10:30 to 12:30 and from 16:00 to 18:00. On the last day of extended paper submission (Tuesday), the Editorial Office was open from 8:00 to 21:00. There were few requests from the authors for assistance from the editors. It would appear that most of the authors have become proficient with the AllenTrack System.

As expected, there were some problems to deal with, such as receiving late reviews, reviewers declining the invitations to review the papers, and, in a number of cases, the necessity of finding/assigning additional reviewers. The editorial work was shared in the spirit of good cooperation among the two Guest Editors and the Associate Guest Editor.

Dealing with as many papers would not have been possible without the help of many individuals. We would like to express our appreciation to all authors who submitted papers and, in particular, to those who were prompt in revising their papers according to suggestions from the reviewers and editors. The reviewers are to be commended for carrying out their tasks in a timely manner. We would also like to thank the Session Chairs for their effort in identifying and suggesting reviewers for the extended papers from the sessions they chaired. This was an important step in the timely preparation of the Special Issue. The CPEM 2014 Session Chairs are as follows.

Gabriela Crotti
Ron Ginley
Samuel Benz
Beat Jeckelmann
Karl-Erik Rydler
Daniele Rovera
Jean Pierre Braun
Ernest Houtzager
Yicheng Wang
Nick Fletcher
Johannes Kohlmann
Ricardo Iuzzolino
Massimo Zucco
Ricardo Carvalho
Alain Michaud
Thomas Kleine-Ostmann
Masanori Ishii
Stephan Schlamminger
Torsten Funck
Hansjörg Scherer
Alan Madej
Gert Rietveld
Dean Jarrett
Robert Hickernell
Barry Wood
Rene Carranza
Ilya Budovsky
Francois Piquemal
Jürgen Melcher
David Humphreys
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Waldemar Kürten Ihlenfeld
Yi-hua Tang
Mariano Real
Carlos David Avilés
Stephan Solve
Gunnar Eklund
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Javier Diaz de
Luca Callegaro
Giovanna Borghi
Rado Lapuh
Guilherme Garcia
Alejandra Tonina
Michael Stock
Daniel Izquierdo
Ian Robinson

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NIST, USA
NIST, USA
METAS, Switzerland
SP, Sweden
LNE, France
METAS, Switzerland
VSL, The Netherlands
NIST, USA
BIPM, France
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INMETRO, Brazil
NRC, Canada
PTB, Germany
NMIJ/AIST, Japan
NIST, USA
PTB, Germany
PTB, Germany
NRC, Canada
VSL, The Netherlands
NIST, USA
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CENAM, Mexico
NMIA, Australia
LNE, France
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INRIM, Italy
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UTE, Uruguay
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Ralf Behr	PTB, Germany
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Chris Eio	NPL, U.K.
Yasutaka Amagai	NMIJ/AIST, Japan
Edson Afonso	INMETRO, Brazil
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Randolph Elmquist	NIST, USA
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Israel Garcia-Ruiz	CENAM, Mexico
Selma Junqueira	ON, Brazil
Thiago Ferreira da Silva	INMETRO, Brazil
Branislav Djokic	NRC, Canada
Bryan Waltrip	NIST, USA
Carlos Sanchez	NRC, Canada
Markus Zeier	METAS, Switzerland
Jonathan Williams	NPL, U.K.
Thomas Nelson	NIST, USA

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I wish to warmly thank Dr. Regis Landim, Lic. Lucas Di Lillo, and Dr. Branislav Djokić for the dedication, competence, and huge amount of time they spent to supervise the review process of the papers published in this CPEM Special Issue. Their dedication was so high that, according to our rules for Special Issues, they accepted to have their own papers submitted as regular papers and not published in this Special Issue.

However, the CPEM Special Issues represent a unique collection of papers covering Precision Electromagnetic Measurements and, as such, are a highly qualified forum where metrologists desire to see their papers published. Since the CPEM papers of the Guest Editors, after having followed the regular review process, supervised by regular TIM Associate Editors, have been accepted in time to be published in June, I decided to add a short section of regular papers to this Special Issue, so that the papers authored by Dr. Landim, Lic. Di Lillo, and Dr. Djokić could also be part of this forum. It is a small tangible token of appreciation to thank the Guest Editors for their dedication to this journal.

We would like to thank CPEM 2012 Guest Editors, George Jones and Tom Lipe of the USA National Institute of Standards and Technology, for their advice and instructions to Lucas Di Lillo and Regis Landim, while serving as CPEM 2012 Associate Guest Editors. These were valuable in our present editorial assignments. Our thanks also go to the staff members of the electricity divisions at the Argentinian Instituto Nacional de Tecnología Industrial and the Brazilian National Institute of Metrology, Quality and Technology. We are especially thankful to Dr. Héctor Laiz, CPEM 2014 Technical Program Chair, and Dr. Gregory Kyriazis, CPEM 2014 Vice-Chair and Exhibits Chair, for their continuous support.

We would also like to thank Prof. Alessandro Ferrero, the Editor-in-Chief of the IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT, for valuable discussions and his suggestions, which helped us implement, and improve where it was possible, the review process.

Finally, we wish our colleagues from the National Research Council of Canada success in organizing CPEM 2016 in Ottawa.

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Regis Landim was born in Rio de Janeiro, Brazil, in 1970. He received the B.S. degree in electrical engineering from the Universidade Federal de Pernambuco, Recife, Brazil, in 1996, and the Ph.D. degree in electrical engineering from the Universidade Federal de Minas Gerais, Belo Horizonte, Brazil, in 2000.

He joined the National Institute of Metrology, Quality and Technology (INMETRO), Duque de Caxias, Brazil, in 2002. From 2006 to 2007, he was a Guest Researcher at the National Institute of Standards and Technology (NIST), Boulder, CO, USA, where he worked on Josephson Voltage Standard systems. He has since continued his collaboration with NIST. Since 2012, he has been the Head of the Quantum Electrical Metrology Laboratory at INMETRO. He is responsible for the dissemination of the Brazil legal volt and ampere and for maintaining internationally consistent and traceable voltage and current standards tied to the SI units. His current research interests include ac and dc Josephson voltage standards and their applications in metrology, ac–dc transfer standards, and power and energy metrology.



Lucas Di Lillo was born in Argentina in 1970. He received the Degree in physics from the University of Buenos Aires, Buenos Aires, Argentina, in 2001.

He joined the Instituto Nacional de Tecnología Industrial (INTI), San Martín, Argentina, in 1994, where he was with the Dielectric Laboratory. From 2000 to 2008, he was in charge of the AC–DC Transfer and Power Laboratory at INTI. In 2005, he was a Guest Scientist at the Physikalisch-Technische Bundesanstalt, Braunschweig, Germany. Since 2008, he has been the Head of the Division of Electricity at INTI.



Branislav Djokić (M'90–SM'97–F'13) received the Dipl.Ing. degree in power systems engineering, the Dipl.Ing. degree in electronics, and the M.Sc. and Ph.D. degrees in electrical engineering from the University of Belgrade, Belgrade, Serbia, in 1981, 1984, 1988, and 1993, respectively.

He was a Researcher with the Research and Development Institute Mihajlo Pupin, Belgrade, from 1982 to 1990, where he was involved in the development of industrial and high-accuracy systems for electrical power and energy measurements. From 1990 to 1994, he was a Faculty Member with the School of Electrical Engineering, University of Belgrade. In 1994, he joined the National Research Council of Canada, Ottawa, ON, Canada, where he has been a Researcher in Electrical Power and Energy Measurements. His current research interests include high-accuracy measurement systems, data acquisition, measurement automation, and digital signal processing.

Dr. Djokić is a Registered Professional Engineer in the province of Ontario. He is the Chair of the IEEE Canada Publications and Communications, and the IEEE Ottawa Section Educational Activities.