

# Awards Presented at the IGARSS 2018 Banquet

*THE IEEE Geoscience and Remote Sensing Society Awards Committee Cochairs*

The IEEE Geoscience and Remote Sensing Society's (GRSS's) 2018 publications, symposium, and special awards were presented at the IEEE International Geoscience and Remote Sensing Symposium (IGARSS) awards banquet on 26 July at the Hemisferic (Figure 1) in the City of Arts and Sciences, an entertainment-based cultural and architectural complex in Valencia, Spain. It is the most important modern tourist destination in the city of Valencia and one of the Twelve Treasures of Spain. The Hemisferic was designed to resemble a human eye; the eyelid opens to access the surrounding water pool. The bottom of the pool is glass, creating the illusion of the eye as a whole.

During the dinner, GRSS President Adriano Camps, Publications Awards Chair Martti Hallikainen, and Symposium Awards Chair Xiuping Jia presented the following awards:

- ▶ the IEEE GRSS Transactions Prize Paper Award
- ▶ the IEEE GRSS Letters Prize Paper Award
- ▶ the IEEE GRSS Journal of Selected Topics in Earth Observations and Remote Sensing (J-STARS) Prize Paper Award
- ▶ the IEEE GRSS Highest Impact Paper Award
- ▶ the IEEE GRSS Early Career Award
- ▶ the IEEE GRSS Regional Leader Award
- ▶ the IEEE GRSS Symposium Prize Paper Award (SPPA)
- ▶ the IEEE GRSS Symposium Interactive Session Prize Paper Award
- ▶ three IEEE GRSS Student Prize Paper Awards, including the IEEE Mikio Takagi Student Prize.

## IEEE GRSS TRANSACTIONS PRIZE PAPER AWARD

The GRSS established the IEEE GRSS Transactions Prize Paper Award to recognize authors who have published an exceptional paper in *IEEE Transactions on Geoscience and Remote Sensing* during the preceding calendar year. Originality and clarity are factors considered during the selection of the



**FIGURE 1.** The Hemisferic in Valencia, Spain.

winning paper. The award consists of a certificate and an honorarium of US\$3,000, which is equally divided among the authors.

The 2018 IEEE GRSS Transactions Prize Paper Award was presented to John R. Kendra, Andrew L. Ashworth, Thomas E. Merryman, Aref Fouladi, and Nathan E. Crow with the citation "for a very significant contribution to the field of endeavor of the IEEE GRSS in the paper coauthored by John R. Kendra, Andrew L. Ashworth, Thomas E. Merryman, Aref Fouladi, and Nathan E. Crow, titled 'Motion-Extended Array Synthesis—Parts I, II and III,' published in *IEEE Transactions on Geoscience and Remote Sensing*, vol. 55, no. 4, pp. 2028–2073 April 2017."

John R. Kendra (Figure 2) received his B.S. degree in electrical engineering from the University of Houston, Texas, in 1989 and his M.S. and Ph.D. degrees in electrical engineering from the University of Michigan, Ann Arbor, in 1990 and 1995, respectively. As a Ph.D. student under the guidance of his coadvisors Fawwaz T. Ulaby and Kamal Sarabandi, he participated as a lead researcher in various remote sensing

efforts including the detection and measurement of ice on the material coating the external fuel tank of the Space Shuttle; the development of a microwave sensor ("snow probe") for in situ measurements of liquid water content in snow; and a theoretical and experimental investigation of the retrieval of snow-water equivalents from multichannel (e.g., L-, C-, X-, and Ku-band) radar backscatter measurements. From 1995 to 2007, Dr. Kendra was employed at Raytheon as a physics engineer, senior physics engineer, and, finally, senior principal multidiscipline engineer. During this time, he focused on the development of signal- and image-processing algorithms in support of various remote sensing and intelligence, surveillance, and reconnaissance (ISR) applications pertinent to high-priority missions of the U.S. government. One particular project he worked on at Raytheon was the development of the original automatic image-processing algorithms used for Global Hawk, the first high-altitude, long-endurance U.S. government unmanned aerial vehicle (UAV) system.

Since 2008, he has been manager of the Imaging and Radar Group with Leidos, Inc., overseeing the work of a team of scientists and engineers working on advanced concepts in image and signal processing as well as the application of multi-intelligence ISR. He has served as principal investigator for numerous advanced technology programs concerned with remote sensing and, in particular, the development of signal processing algorithms supporting remote sensing aims, primarily for governmental customers. A generalized view of passive-motion extended array synthesis (MXAS) has been a significant recent thrust of Dr. Kendra's efforts. This research has illuminated a fundamentally new perspective on the synthesis of (potentially very large) virtual arrays and the possibility of orders of magnitude improvement relative to the state of the art in radio-frequency (RF) and acoustic remote sensing applications. Dr. Kendra served as a technology fellow of the National Reconnaissance Organization from 2002 to 2003. He was recently selected as a 2018 NASA Innovative Advanced Concepts fellow.

Andrew L. Ashworth [Figure 3(a)] received his B.S. degree in electrical engineering from the University of Virginia, Charlottesville, in 2009. He is currently working toward his M.S. degree in computer science and machine learning at the Georgia Institute of Technology, Atlanta. Previously, he worked in the Radar Division of the U.S. Naval Research Laboratory and at Leidos, Inc., as a signal-processing engineer.

Thomas E. Merryman [Figure 3(b)] received his B.S. degrees in electrical and computer engineering from North Carolina State University, Raleigh, and his M.S. degree in computer and electrical engineering from Carnegie Mellon University, Pittsburgh, Pennsylvania, in 2003 and 2008, respectively. His graduate research focused on image and video processing

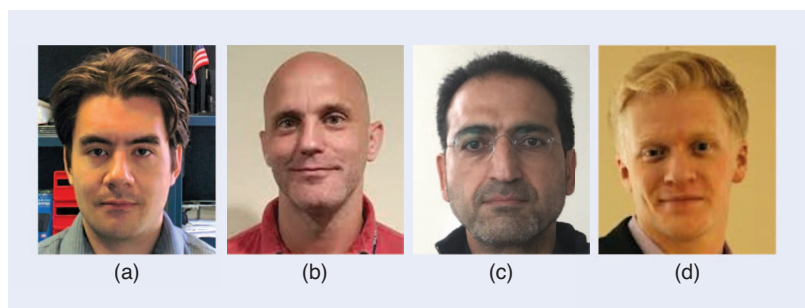


**FIGURE 2.** 2018 IEEE GRSS Transactions Prize Paper Award recipient John R. Kendra (right) with GRSS President Adriano Camps.

and the use of wavelets in imaging. In 2006, he worked at Zeta Associates, Fairfax, Virginia, developing detection and classification algorithms. He joined the Science Applications International Corporation (SAIC) in 2009 and worked on optimizing the detection and classification of unintended emission signals and the development of prototype RF collection systems. In 2014, he began working at BIT Systems, where he researches tactical systems.

Aref Fouladi [Figure 3(c)] received his M.S. degree from Johns Hopkins University, Baltimore, Maryland, and his Ph.D. degree in physics from the University of Maryland at College Park. Currently, he is the chief scientist at Advanced Geolocation Solutions, a high-tech engineering and research and development company in Northern Virginia. Prior to his current position, Dr. Fouladi worked at SAIC as a signals and systems engineer. During his time at Digital Receiver Technology, he founded the Antenna, Direction Finding, and Geolocation Group. His research interests include advanced topics in antenna design, such as graphene and fractal antennas, high-frequency propagation modes, vector sensor arrays, and transformational optics.

Nathan E. Crow [Figure 3(d)] received his B.S. degree in electrical engineering from the Virginia Polytechnic Institute



**FIGURE 3.** The four IEEE GRSS Transactions Prize Paper Award recipients in addition to Dr. Kendra: (a) Andrew L. Ashworth, (b) Thomas E. Merryman, (c) Aref Fouladi, and (d) Nathan E. Crow.

and State University, Blacksburg, in 2016. In 2013 and 2014, he worked for Leidos as a systems engineering intern. His responsibilities there included supporting the MXAS program through the use of ultraprecise, augmented global positioning satellite (GPS) technology. He then worked for General Dynamics Advanced Information Systems as a systems engineering intern, where his focus shifted to software integration and microprocessing. Currently, he is working for Capital One as a financial analyst, where he specializes in process improvement and automation.

### IEEE GRSS LETTERS PRIZE PAPER AWARD

The GRSS established the IEEE GRSS Letters Prize Paper Award to recognize authors who have published an exceptional paper in terms of content and impact on geoscience and remote sensing in *IEEE Geoscience and Remote Sensing Letters* during the previous calendar year. If a suitable paper cannot be selected from those published during the previous year, then any papers published in prior years subsequently recognized as meritorious may be considered. When determining the winning paper, originality, impact, scientific value, and clarity are the factors considered. The award consists of a certificate and US\$1,500, equally divided among the authors.

The 2018 IEEE GRSS Letters Prize Paper Award was presented to Howard A. Zebker (Figure 4) with the citation “for a very significant contribution to the field of endeavor of the IEEE GRSS in the paper authored by Howard A. Zebker and titled ‘User-Friendly InSAR Data Products: Fast and Simple Timeseries Processing,’ published in *IEEE Geoscience and Remote Sensing Letters*, vol. 14, no. 11, pp. 2122–2126, November 2017.”

Howard A. Zebker received his B.S. degree from the California Institute of Technology, Pasadena, his M.S. degree from the University of California, Los Angeles, and his Ph.D. degree from Stanford University, California, in 1976, 1979, and 1984, respectively. He is currently professor of geophysics and electrical engineering at Stanford, where his

research group specializes in interferometric radar remote sensing. Originally a microwave engineer, he built support equipment for the SEASAT satellite synthetic aperture radar and designed airborne radar systems. He later developed imaging radar polarimetry, a technique for measuring the radar-scattering matrix of a surface. He is best known for the development of radar interferometry, leading to spaceborne and airborne sensors capable of measuring topography to meter-scale accuracy and surface deformation to millimeter scale. More recently, Dr. Zebker has participated in the NASA Cassini Mission to Saturn, concentrating on the analysis of data acquired by the radar/radiometer instrument.

### IEEE GRSS J-STARS PRIZE PAPER AWARD

The GRSS established the IEEE GRSS J-STARS Prize Paper Award to recognize authors who have published an exceptional paper in terms of content and impact on geoscience and remote sensing in *J-STARS* during the previous calendar year. Factors such as originality, clarity, and timeliness of publication are considered during the selection of the winning paper, and IEEE membership is preferable. The award consists of a certificate and an honorarium of US\$1,500, equally shared among the authors.

The 2018 IEEE GRSS J-STARS Prize Paper Award was presented to Emanuele Santi, Simonetta Paloscia, Paolo Pampaloni, Simone Pettinato, Tomoyuki Nomaki, Mieko Seki, Keiji Sekiya, and Takashi Maeda with the citation “for a very significant contribution to the field of endeavor of the IEEE GRSS in the paper coauthored by Emanuele Santi, Simonetta Paloscia, Paolo Pampaloni, Simone Pettinato, Tomoyuki Nomaki, Mieko Seki, Keiji Sekiya, and Takashi Maeda and titled ‘Vegetation Water Content Retrieval by Means of Multifrequency Microwave Acquisitions from AMSR2,’ published in *IEEE J-STARS*, vol. 10, no. 9, pp. 3861–3873, September 2017.”

Emanuele Santi (Figure 5) received his M.S. degree in electronic engineering from the University of Florence, Italy, and his Ph.D. degree in Earth remote sensing techniques



**FIGURE 4.** Howard A. Zebker (right) receives the IEEE GRSS Letters Prize Paper Award from GRSS President Adriano Camps.



**FIGURE 5.** Three of the IEEE GRSS J-STARS Prize Paper Award recipients: Emanuele Santi (second from left), Simonetta Paloscia, and Paolo Pampaloni with GRSS President Adriano Camps (left).



from the University of Basilicata, Italy, in 1997 and 2005, respectively. Since 1998, he has worked as a researcher with the Microwave Remote Sensing Group at the Institute of Applied Physics (IFAC) of the National Research Council (NRC). His research deals with the development and validation of models and statistical inversion algorithms for estimating the geophysical parameters of soil, sea, snow, and vegetation from the microwave emission and scattering of natural surfaces. He is currently involved in many national and international projects [the Italian Space Agency (ASI), the European Space Agency (ESA), and the Japan Aerospace Exploration Agency (JAXA)], acting as team leader or co-investigator. He has authored or coauthored 123 papers, including Institute for Scientific Information (ISI) books and journals and proceedings of international conferences. Since 2003, Dr. Santi has reviewed 149 papers for 19 different international journals. He is a Member of the IEEE and the Microwave Remote Sensing Center. He is the vice-chair of GRS29 Central–North Italy Chapter of the GRSS and the conference chair of SPIE Europe Remote Sensing.

Simonetta Paloscia (Figure 5) has been with the NRC since 1984. Her current research involves the study of microwave emission and scattering of soil (both bare and snow covered) and vegetation. Since 2004, she has led the Microwave Remote Sensing Group at the Institute of Applied Physics (IFAC) and headed research there since 2010. She was primary and coinvestigator of many national and international projects (e.g., with ASI, ESA, and JAXA). She has been a principal investigator for the JAXA Science Team of AQUA/the Advanced Microwave Scanning Radiometer-Earth (AMSR-E) and GCOM/AMSR-2 for algorithm development of soil moisture and vegetation biomass retrieval since 1996. She is a member of the Soil Moisture Active Passive Jet Propulsion Laboratory (JPL)/NASA Science Team.

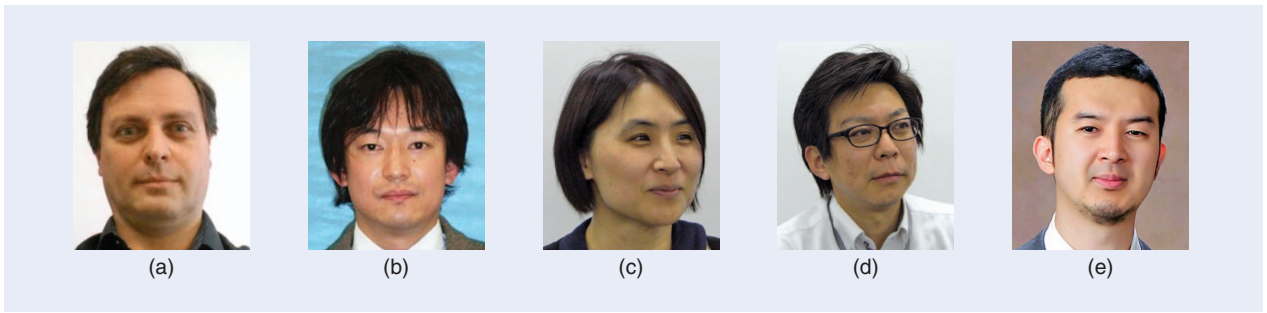
Previously, she was a member of the organizing and steering committees for several international meetings (e.g., the Specialist Meeting on Microwave Radiometry and IGARSS). She is a member of the permanent steering committee of the MicroRad meeting, and she was general cochair of the MicroRad 1999 and 2008 and of the International Union of Radio Science (URSI)-F 2010 meetings in Florence, Italy. She is associate editor of *International Journal of Remote Sensing*, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, and *European Journal of Remote Sensing*. She is a Fellow of the IEEE and served as chair of URSI Commission F from 2014 to 2017. She is the author or coauthor of more than 80 works published in international journals and books and more than 200 papers published in proceedings of international meetings.

Paolo Pampaloni (Figure 5) is head of research at the IAP of the Italian NRC. His current research deals with active and passive microwave remote sensing of land surfaces. From 1966 to 1979, he was involved in radio astronomy and solar physics with the Arcetri Astrophysical Observatory, Florence, Italy. Since 1980, he has been with the NRC in Florence, Italy. From 1983 to 1996, he was a consultant

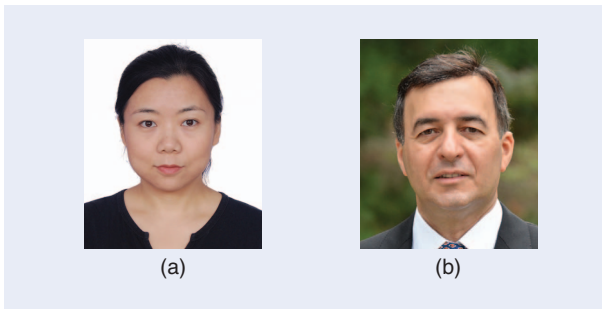
with the ESA for microwave radiometry as a member of various working and advisory groups, such as the Latin American Working Group, Multiband Imaging Microwave Radiometer, and Earth Observation Advisory Committee. He has served as principal investigator and coinvestigator of several international projects and experiments in Europe and the United States and as coordinator of numerous national and international research programs. He served as XSAR project scientist and deputy team leader of the XSAR/SIR-C (NASA, ASI, and the German Aerospace Center) project. He has also served at various academic and professional institutions as tutor, external referee, or external examiner of Ph.D. students as well as an adjunct professor. He has been Italy's official member of URSI Commission F (2005–2013), president of the Microwave Remote Sensing Center (1993–2011), chair of the IEEE Central and South Italy Section (2002–2005), and member of the IEEE Awards Committee (2008–2017). Dr. Pampaloni has authored or coauthored 176 papers in international journal and conference proceedings and seven monographs, and he has edited three books with VSP Press. He has presented invited papers at the URSI General Assembly and Scientific Symposium, IGARSS, and other international symposia.

He has served as general chair of the second and sixth specialist meetings on Microwave Radiometry and Remote Sensing, Florence, Italy, in 1988 and 1999. He was the general chair of the IGARSS 1995 and guest editor of the IGARSS 1995 and MicroRad 2008 special issues of *IEEE Transactions on Geoscience and Remote Sensing*. Since 1994, he has been involved in the Technical Program Committee (TPC) of IGARSS and the Progress in Electromagnetics Research Symposium. Additionally, he has served as session chair, organizer, and member of the TPC for numerous international conferences. He is an associate editor of *IEEE Transactions on Geoscience and Remote Sensing* and a reviewer for many international journals. He is a Life Fellow of the IEEE and a fellow of the Electromagnetic Academy. Dr. Pampaloni received the 2004 IEEE GRSS Distinguished Achievement Award.

Simone Pettinato [Figure 6(a)] received his M.S. degree in telecommunications engineering from the University of Florence, Italy, and his Ph.D. degree in methods and technologies for environmental monitoring from the University of Basilicata, Italy, in 2002 and 2007, respectively. Since 2003, he has worked as a scientist with the Microwave Remote Sensing Group at CNR–IFAC as scientist. Dr. Pettinato's research involves the investigation of natural surfaces by means of active and passive microwave sensors to retrieve information of geophysical parameters related to the hydrological cycle (e.g., soil moisture, snow, and vegetation). As coinvestigator, he participated in different national and international scientific projects funded by the European Commission. In 2009, 2010, and 2012, he was involved in three Antarctic expeditions involving the execution of the DOMEX-2, DOMEX-3, and GPS-SIDS projects. He was active in several ASI projects



**FIGURE 6.** Five of the eight IEEE GRSS J-STARS Prize Paper Award recipients: (a) Simone Pettinato, (b) Tomoyuki Nomaki, (c) Mieko Seki, (d) Keiji Sekiya, and (e) Takashi Maeda.



**FIGURE 7.** Two of the three IEEE GRSS Highest Impact Paper Award recipients: (a) Yi Chen and (b) Nasser M. Nasrabadi.

for forecasting floods, Cosmo-SkyMed applications (Hydro-Cosmo: the retrieval and monitoring of land hydrological parameters for risk and water resources management), and cap and trade assessment by remote sensing investigation. He is the author or coauthor of more than 90 papers published in international peer-reviewed journals and conference proceedings.

Tomoyuki Nomaki [Figure 6(b)] received his B.S. degree in meteorology and his M.S. degree in environmental Earth science from the University of Tsukuba, Japan, in 1997 and 1999, respectively. Since 1999, he has been with the Remote Sensing Technology Center of Japan (RESTEC). His research interests include the study and development of remote sensing.

Mieko Seki [Figure 6(c)] received her B.S. degree in meteorology and her M.S. degree in environmental Earth science from Hokkaido University, Sapporo, Japan, in 1995 and 1997, respectively. Since 1999, she has been with RESTEC. She is in charge of AMSR-2 validation.

Keiji Sekiya [Figure 6(d)] received his B.E. degree in communication engineering from the Tohoku Institute of Technology, Sendai, Japan, in 2002. He is with RESTEC; his role there involves the calibration and validation of the AMSR-2.

Takashi Maeda [Figure 6(e)] received his B.E. degree in electric and electronics engineering from the Kyoto University, Japan, in 2001. He received his M.S. degree in informatics and his Ph.D. degree in electronics engineering from the University of Tokyo, Japan, in 2004 and 2007, respectively. He is currently a researcher with the Earth Observation Research Center under JAXA. His research interests

include passive microwave radiometry over land using the AMSR-E and AMSR-2.

### IEEE GRSS HIGHEST IMPACT PAPER AWARD

The GRSS established the IEEE GRSS Highest Impact Paper Award to recognize authors who have published a scientific paper in an IEEE GRSS journal in the past five years that has received the highest number of citations and impact, as measured collectively by the Thomson Reuters *Web of Science*, *Scopus*, and *Google Scholar* citation indices. A previously selected paper shall not be eligible for this award in future years. The award consists of a certificate and an honorarium of US\$3,000, equally divided among the authors.

The 2018 IEEE GRSS Highest Impact Paper Award was presented to Yi Chen, Nasser M. Nasrabadi, and Trac D. Tran with the citation “for a very significant contribution to the field of endeavor of the IEEE GRSS in the paper coauthored by Yi Chen, Nasser M. Nasrabadi, and Trac D. Tran and titled ‘Hyperspectral Image Classification via Kernel Sparse Representation,’ published in *IEEE Transactions on Geoscience and Remote Sensing*, vol. 51, no. 1, pp. 217–231, January 2013.”

Yi Chen [Figure 7(a)] received her B.Eng. degree in electronic engineering from Tsinghua University, Beijing, China, her M.Sc. degree in electrical engineering from the University of Victoria, British Columbia, Canada, and her Ph.D. degree in electrical and computer engineering from Johns Hopkins University, Baltimore, Maryland, in 2002, 2006, and 2012, respectively. Her research interests include the applications of compressed sensing and sparse representations, image processing, computer vision, and computer graphics. From 2012 to 2015, Dr. Chen was with ObjectVideo working as a research scientist on large-scale image and video geolocation. She is currently a software engineer at Google.

Nasser M. Nasrabadi [Figure 7(b)] received his B.Sc. and Ph.D. degrees in electrical engineering from the Imperial College of Science and Technology, University of London, United Kingdom, in 1980 and 1984, respectively. From October 1984 to December 1984, he worked for IBM, United Kingdom, as a senior programmer; and from 1985 to 1986, he was with Philips Research Laboratory, New York, as a member of technical staff. He was an assistant professor in the Department of Electrical Engineering

at Worcester Polytechnic Institute, Massachusetts, from 1986 to 1991; and from 1991 to 1996, he was an associate professor with the Department of Electrical and Computer Engineering, State University of New York at Buffalo. Between September 1996 and 2015 he was also a senior research scientist with the U.S. Army Research Laboratory. Since August 2015, he has been a professor in the Lane Department of Computer Science and Electrical Engineering at West Virginia University, Morgantown. Dr. Nasrabadi has served as associate editor for *IEEE Transactions on Image Processing*, *IEEE Transactions on Circuits, Systems, and Video Technology*, and *IEEE Transactions on Neural Networks*. His research interests include hyperspectral processing, machine learning, sparsity, biometrics, and deep neural networks. He is a Fellow of the IEEE and SPIE.

Trac D. Tran (Figure 8) received his B.S. and M.S. degrees in electrical engineering from the Massachusetts Institute of Technology, Cambridge, in 1993 and 1994, respectively, and his Ph.D. degree in electrical engineering from the University of Wisconsin, Madison, in 1998. In July 1998, Dr. Tran joined the Department of Electrical and Computer Engineering, Johns Hopkins University, Baltimore, Maryland, as a professor. His research interests are in the field of digital signal processing (in particular, sparse representation), sparse recovery, sampling, multirate systems, filter banks, transforms, wavelets and their applications in signal analysis, compression, processing, and communications. His pioneering research on integer-coefficient transforms and pre/postfiltering operators has been adopted for critical components of Microsoft Windows Media Video 9 and JPEG XR—the latest international still-image compression standard, ISO/IEC 29199-2. Dr. Tran received the National Science Foundation (NSF) CAREER award in 2001, the William H. Huggins Excellence in Teaching Award from Johns Hopkins University in 2007, and the Capers and Marion McDonald Award for Excellence in Mentoring and Advising in 2009. He is a Fellow of the IEEE for his contributions to multirate and sparse-signal processing.

### IEEE GRSS EARLY CAREER AWARD

The IEEE GRSS Early Career Award aims to promote, recognize, and support young scientists and engineers within the GRSS who have demonstrated outstanding ability and the promise for significant future contributions. Factors considered for nomination include quality, the significance and impact of contributions, papers published in archival journals, papers presented at conferences and symposia, patents, a demonstration of leadership, and advancement of the profession. The candidate must have been a GRSS member for at least five years and be younger than 35 at the time of nomination. He or she must be making outstanding contributions in one or more GRSS field(s) of interest. Previous award winners are ineligible. The award consists of a certificate and an honorarium of US\$1,500.

The 2018 IEEE GRSS Early Career Award was presented to Begüm Demir (Figure 9) with the citation “in recognition of outstanding contributions in machine learning for information retrieval in remote sensing.” Demir received her Ph.D. degree in electronics and telecommunication engineering from Kocaeli University, Turkey, in 2010. From 2013 to 2017, she was an assistant professor in the Department of Computer Science and Information Engineering, University of Trento, Italy. Since 2018, she has been a professor and head of the Remote Sensing Image Analysis group with the Faculty of Electrical Engineering and Computer Science, Technische Universität Berlin, Germany. She has authored more than 70 papers in reviewed international journals and conference proceedings as well as three book chapters. Since 2014, she has served as cochair of Image and Signal Processing for the Remote Sensing Workshop as part of the IEEE Conference on Signal Processing and Communications Applications. She is a reviewer for several journals, such as *IEEE Transactions on Geoscience and Remote Sensing*, *IEEE Geoscience and Remote Sensing Letters*, *Pattern Recognition*, *IEEE Transactions on Circuits and Systems for Video Technology*,



**FIGURE 8.** Trac D. Tran (right) receives the 2018 IEEE GRSS Highest Impact Paper Award from GRSS President Adriano Camps.



**FIGURE 9.** 2018 IEEE GRSS Early Career Award recipient Begüm Demir (right) with GRSS President Adriano Camps.



and *International Journal of Remote Sensing*, as well as several international conferences.

Her research interests include machine learning and big data management, with applications for remote sensing image analysis. In particular, she conducts research on remote sensing image classification, biophysical parameters estimation, and content-based remote sensing image search and retrieval. She was cofounder of PARS AR-GE, a high-tech research and development spin-off operating on vision systems, embedded systems, image processing, signal processing, hardware/software design, high-end research and development, and product prototyping and development. In 2017, she was a recipient of the prestigious European Research Council (ERC) Starting Grant for a project titled "Big Earth-Accurate and Scalable Processing of Big Data in Earth Observation." She is a Senior Member of the IEEE.

### IEEE GRSS REGIONAL LEADER AWARD

The IEEE GRSS Regional Leader Award was established to promote, recognize, and support members within the GRSS who have made significant technical, scientific, and/or organizational achievements in the areas of interest to the IEEE Geoscience and Remote Sensing community. The award shall be considered annually and presented if an outstanding candidate is identified. Preference may be given to candidates who are pivotal and have performed significant contributions in a region where the GRSS membership and local activities have substantially increased in recent years. Preference may also be given to candidates who are GRSS members with the grade of Senior Member or Fellow. The award consists of a certificate and an honorarium of US\$1,500.

The 2018 IEEE GRSS Regional Leader Award was presented to Alejandro Frery with the citation "in recognition of outstanding contributions in consolidation of a scientific culture in Latin America."

Alejandro Frery (Figure 10) received the B.S. degree in electronic and electrical engineering in 1983 from the Uni-



**FIGURE 10.** Alejandro Frery (right) receives the 2018 IEEE GRSS Regional Leader Award from GRSS President Adriano Camps.

versidad de Mendoza, Argentina, the M.Sc. degree in applied mathematics (statistics) in 1990 from the Instituto de Matemática Pura e Aplicada, Rio de Janeiro, Brazil, and the Ph.D. degree in applied computing in 1993 from the Instituto Nacional de Pesquisas Espaciais, São José dos Campos, Brazil. Since 2003, he has been a professor and, since 2016, vice president for research, graduate courses, and innovation with Universidade Federal de Alagoas, Maceió, Brazil. He also coordinates the Laboratory of Scientific Computing and Numerical Analysis. His research interests are statistical computing and stochastic modeling.

He is currently editor in chief of *IEEE Geoscience and Remote Sensing Letters*. He has played a key role in IEEE GRSS efforts to intensify interaction with the Latin American scientific community as well in the formation of and mentoring for Chapters in Argentina, Brazil and Chile. The results of these efforts are seen, for example, in the number of articles from these countries in the three main IEEE GRSS journals.

### IEEE GRSS SYMPOSIUM PRIZE PAPER AWARD

The GRSS established the SPPA to recognize authors who have presented an exceptional paper in terms of content and impact on the GRSS at IGARSS. In selecting the paper, factors considered include originality, clarity, and timeliness of publication. The published versions of the papers in the digest shall also be evaluated. The prize consists of a certificate and an honorarium of US\$1,250, equally divided among the authors.

The 2018 IEEE GRSS SPPA was presented to the following two coauthor teams:

- 1) Adrián Pérez-Suay and Gustau Camps-Valls with the citation "for a very significant contribution to the field of endeavor of the IEEE GRSS in the paper coauthored by Adrián Pérez-Suay and Gustau Camps-Valls and titled 'Causal Inference in Geosciences with Kernel Sensitivity Maps,' presented at the 2017 IGARSS, July 2017, in Fort Worth, Texas."
- 2) Claudia Paris, Lorenzo Bruzzone, and Diego Fernández-Prieto with the citation "for a very significant contribution to the field of endeavor of the IEEE GRSS in the paper coauthored by Claudia Paris, Lorenzo Bruzzone, and Diego Fernández-Prieto and titled 'A Novel Automatic Approach to the Update of Land-Cover Maps by Unsupervised Classification of Remote Sensing Images,' presented at the 2017 IGARSS, July 2017, in Fort Worth, Texas."

Adrián Pérez-Suay (Figure 11) received his B.Sc. degree in mathematics, his M.Sc. degree in advanced computing and intelligent systems, and his Ph.D. degree in computational mathematics and computer science in 2007, 2010, and 2015, respectively, from the Universitat de València, Spain, where he is currently an assistant professor in the Department of Mathematics as well as a postdoctoral researcher with the Image and Signal Processing Group (<http://isp.uv.es>). In 2018, he did a brief research stay at the

University of Cantabria, Spain. His research interests include dependence estimation, kernel methods, and causal inference for remote sensing data analysis.

Gustau Camps-Valls (Figure 11) received his Ph.D. degree in physics in 2002 from the Universitat de València, Spain, where he is currently a full professor of electrical engineering and coordinator of the Image and Signal Processing Group (<http://isp.uv.es>). Previously, he was a visiting researcher at the University of Trento, Italy, and the Max Planck Institute for Biological Cybernetics, Baden-Württemberg, Germany; he was also an invited professor at the École Polytechnique Fédérale de Lausanne, Switzerland. He has authored more than 150 peer-reviewed journal papers, more than 200 international conference papers, and 20 international book chapters and has edited several books including *Kernel Methods in Bioengineering*, *Signal and Image Processing*, *Kernel Methods for Remote Sensing Data Analysis*, *Remote Sensing Image Processing*, and *Digital Signal Processing with Kernel Methods*. His h-index is 56, he entered the ISI's list of highly cited researchers in 2011, and Thomson Reuters ScienceWatch identified one of his papers, "Kernel-Based Analysis of Hyperspectral Images" as a fast-moving research front. In 2015, he received the prestigious ERC Consolidator Grant for the project "Statistical Learning for EO Data Analysis." He is a referee and program committee member for many international journals and conferences. His research interests include the development of machine-learning algorithms for geoscience and remote sensing data analysis.

He has been a member of both the Data Fusion Technical Committee of the GRSS and the Machine Learning for Signal Processing Technical Committee of the IEEE Signal Processing Society since 2007 and 2009, respectively. Currently, he is an associate editor for *IEEE Transactions on Signal Processing* and *IEEE Geoscience and Remote Sensing Letters* and has been an associate editor for *IEEE Signal Processing Letters* as well as an invited guest editor for *IEEE Journal of*

*Selected Topics in Signal Processing* and *IEEE Geoscience and Remote Sensing Letters*.

Claudia Paris (Figure 12) received her laurea (B.S. equivalent) degree and laurea specialistica (M.S. equivalent) degree (summa cum laude) in telecommunication engineering and her Ph.D. degree in information and communication technology from the University of Trento, Italy, in 2010, 2012, and 2016, respectively. She completed the Honors Master Program in Research for her master's degree in telecommunication engineering in 2012. Since 2014, she has been a teaching assistant in the Department of Information Engineering and Computer Science, University of Trento. Her research work includes image processing and machine learning, with applications for remote sensing image analysis. Currently, she is working on the analysis of multitemporal images acquired by the ESA Sentinel-2 satellite constellation for the automatic update of land-cover maps in the context of the Scientific Exploitation of Operational Missions Sentinel-2 for the Science ESA program. Dr. Paris won the prestigious SPPA at IGARSS 2016 (Beijing, China, 2016). She was a technical committee member of the 2017 Earthvision International Workshop on Large Scale Computer Vision for Remote Sensing Imagery and the 2018 DeepGlobe Satellite Image Understanding Challenge. She is a reviewer for many international journals, including *IEEE Transactions on Geoscience and Remote Sensing*, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, and *IEEE Geoscience and Remote Sensing Letters*. Dr. Paris's research interests include remote sensing, single-date, and time-series image classification; land-cover map updates; and the fusion of multisource remote sensing data for the estimation of biophysical parameters. She conducts research on these topics within the frameworks of national and international projects.

Lorenzo Bruzzone (Figure 12) received his laurea (M.S. equivalent) degree (summa cum laude) in electronic engineering and his Ph.D. degree in telecommunications from



**FIGURE 11.** One of the two author teams who received the 2018 IEEE GRSS Symposium Prize Paper Award: (from right) Adrián Pérez-Suay and Gustau Camps-Valls with GRSS President Adriano Camps.



**FIGURE 12.** The second author team who received the 2018 IEEE GRSS Symposium Prize Paper Award being presented their award: (from left) Symposium Awards Chair Xiuping Jia, GRSS President Adriano Camps, Diego Fernández Prieto, Claudia Paris, and Lorenzo Bruzzone.



the University of Genoa, Italy, in 1993 and 1998, respectively. Currently, he is a full professor of telecommunications at the University of Trento, Italy, where he teaches remote sensing, radar, and digital communications. Dr. Bruzzone is the founder and director of the Remote Sensing Laboratory in the Department of Information Engineering and Computer Science at the University of Trento. His research interests include remote sensing, radar and synthetic aperture radar, signal processing, machine learning, and pattern recognition. He promotes and supervises research on these topics within the frameworks of many national and international projects. He is the principal investigator for numerous research projects, including the Radar for Icy Moon Exploration instrument in the framework of the ESA's Jupiter Icy Moons *Explorer* mission.

He is the author or coauthor of 218 scientific publications in referred international journals (157 in IEEE journals), more than 290 papers in conference proceedings, and 21 book chapters. He is the editor or coeditor of 18 books/conference proceedings and one scientific book. His papers are highly cited, as evidenced by the total number of citations (more than 24,500) and his h-index of 72. He has been invited to serve as keynote speaker for over 30 international conferences and workshops. Since 2009, he has been a member of the GRSS Administrative Committee. Dr. Bruzzone was awarded first place in the Student Prize Paper Competition at IGARSS 1998 in Seattle, Washington. He has been received many international and national honors and awards, including the 2015 IEEE GRSS Outstanding Service Award and the IGARSS 2017 Symposium Prize Paper Award. Dr. Bruzzone has been a guest coeditor of many special issues of international journals. He is the cofounder of the IEEE International Workshop on the Analysis of Multi-Temporal Remote Sensing Images series and is currently a member of the permanent steering committee of this series of workshops. Since 2003, he has been the chair of the SPIE Conference on Image and Signal Processing for Remote Sensing. He founded *IEEE Geoscience and Remote Sensing Magazine* and served as editor-in-chief from 2013 to 2017. Currently, he is an associate editor for *IEEE Transactions on Geoscience and Remote Sensing*. He was a Distinguished Speaker of the IEEE GRSS from 2012 to 2016.

Diego Fernández Prieto (Figure 12) received his B.S. degree in physics from the University of Santiago de Compostela, Spain, his M.S. degree in business administration from the University of Deusto, Spain, and the University of Kent, United Kingdom, and his Ph.D. degree in electronic engineering and computer science from the Department of Biophysical and Electronic Engineering at the University of Genoa, Italy, in 1994, 1997, and 2001,

respectively. In 1994 and 1996, he was with the Istituto per la Matematica Applicata of the CNR of Italy. Since 2000, he has been with the ESA, where he has held different positions in the development and science of Earth observation applications. Currently, Dr. Prieto is head of the research and development section in the Earth Observation Science, Applications, and Climate Department, and he is responsible for the Earth Observation Scientific Data Exploitation Program.

### IEEE GRSS SYMPOSIUM INTERACTIVE SESSION PRIZE PAPER AWARD

The GRSS established the IEEE GRSS Symposium Interactive Session Prize Paper Award to recognize the author(s) who posted at IGARSS an exceptional paper in terms of content and impact on geoscience and remote sensing. When selecting the winning paper, factors considered are originality, clarity, and timeliness of publication. The published versions of the papers in the digest shall also be evaluated. The prize consists of a certificate and an honorarium of US\$1,250, equally divided among the authors.

The 2018 IEEE GRSS Interactive Session Prize Paper Award was presented to Robert M. Beauchamp and V. Chandrasekar with the citation "for an exceptional paper coauthored by Robert M. Beauchamp and V. Chandrasekar and titled 'Using a Wind Turbine's State to Suppress Its Signature in Radar Observations,' posted during the Interactive Session of the 2017 IGARSS, July 2017, in Fort Worth, Texas."

Robert M. Beauchamp (Figure 13) received his B.S. and M.S. degrees in electrical engineering from the University of Massachusetts, Amherst, and Northeastern University, Boston, Massachusetts, in 2005 and 2010, respectively. In 2016, he earned his Ph.D. degree in electrical engineering from Colorado State University (CSU), Fort Collins, where he was a member of the Radar and Communications Group. Since 2016, he has worked at JPL in Pasadena, California, as a member of the Radar Concepts and Formulation Group. His research interests include systems design, signal processing, and modeling for geophysical radar remote sensing applications.

V. Chandrasekar (Figure 14) received his B.S. degree from the Indian Institute of Technology, Kharagpur, in 1981 and his Ph.D. degree from CSU, Fort Collins, in 1986, where he is currently a University Distinguished Professor. He has been actively involved with research and development of weather radar systems for over 30 years. He has played a key role in developing the CSU-CHILL National Radar Facility, one of the most advanced meteorological radar systems available for research. Dr. Chandrasekar continues to work actively with the CSU-CHILL radar, supporting its research and



**FIGURE 13.** 2018 IEEE GRSS Symposium Interactive Session Prize Paper Award coreipient Robert M. Beauchamp.

education mission. He was the director of the Research Experiences for Undergraduates Program, promoting research in undergraduate curriculum. He has been a visiting professor at the CNR of Italy, an affiliate scientist at the JPL, and the NASA Goddard Distinguished Visiting Scientist. He served as the research director of the NSF-ERC, Center for Collaborative Adaptive Sensing of the Atmosphere. He is an avid experimentalist, conducting special experiments to collect in situ observations to verify new techniques and technologies. He serves as the College of Engineering leader for promoting international research collaboration.

He has coauthored two text books, five general books, and more than 225 journal articles. He has served as an academic advisor for more than 70 graduate students. He has received numerous awards, including the NASA Technical Contribution Award, the NASA Group Achievement Award for the Algorithm Team and Post Launch Team, the Outstanding Advisor Award, the CSU Innovations Award, the IEEE GRSS Education Award, and the National Oceanic and Atmospheric Administration (NOAA)/National Weather Service Directors Medal of Excellence. He served as the general chair of the IEEE IGARSS 2006 Symposium and currently serves as the international chair of Commission F and URSI. He also served as chief editor of *Journal of Atmospheric and Oceanic Technology*. He is a fellow of URSI, the American Meteorological Society, and the NOAA Cooperative Institute for Research in the Atmosphere. He is a Fellow of the IEEE.

### IEEE GRSS STUDENT PRIZE PAPER AWARDS

The IEEE GRSS Student Prize Paper Award program was established to recognize the best student papers presented at IGARSS. It is believed that early recognition of an outstanding paper will encourage students to strive for greater and



**FIGURE 14.** V. Chandrasekar (right) receives the 2018 IEEE GRSS Symposium Interactive Session Prize Paper Award from GRSS President Adriano Camps (middle) and Symposium Awards Chair Xiuping Jia.

continued contributions to the geoscience and remote sensing profession. The award is considered annually.

Ten high-quality papers are preselected by the GRSS Student Prize Paper reviewers and Student Prize Paper Awards Committee in cooperation with the Technical Program Committee. These students present their papers in a special session, and a jury, formed by the Student Prize Paper Awards Committee, evaluates and ranks them for the awards. The ten finalists of the Student Prize Paper Award contest are invited to attend the awards banquet free of charge (Figure 15).

A total of three awards are presented, including two IEEE GRSS Student Prize Paper Awards (second and third prize, with a certificate presented for each and an honorarium of US\$750 and US\$500, respectively) and



**FIGURE 15.** The ten 2018 IEEE GRSS Student Prize Paper Award contest finalists: (starting fourth from left) Daniele Marinelli, Tianlin Wang, Eric Loria, Rajeswari Balasubramaniam, Lina Zhuang, Daniel Heestermans Svendsen, Renwei Dian, Tianzhu Liu, Jin Huang, and Gonzalo Mateo-García. Also pictured are Publications Awards Chair Martti Hallikainen (from left), Symposium Awards Chair Xiuping Jia, and GRSS President Adriano Camps.





**FIGURE 16.** 2018 IEEE GRSS Student Prize Paper Award recipient Lina Zhuang (from right) with Society President Adriano Camps and Symposium Awards Chair Xiuping Jia.



**FIGURE 17.** 2018 IEEE GRSS Student Prize Paper Award recipient Daniele Marinelli (center) with GRSS President Adriano Camps (right) and Symposium Awards Chair Xiuping Jia.



**FIGURE 18.** 2018 IEEE Mikio Takagi Student Prize recipient Tianlin Wang (right) with Symposium Awards Chair Xiuping Jia (left) and GRSS President Adriano Camps.

the IEEE Mikio Takagi Student Prize (first prize, which includes a certificate and an honorarium of US\$1,000).

### **SECOND AND THIRD PRIZE PAPER RECIPIENTS**

The third prize was presented to Lina Zhuang (Figure 16) with the citation “for the paper ‘Hy-Demosacking: Hyperspectral Blind Reconstruction from Spectral Subsampling.’” Zhuang’s advisor is Prof. Jose M. Bioucas-Dias from the University of Lisbon, Portugal. Zhuang received her B.S. degrees in geographic information systems and economics from South China Normal University, Guangzhou, in 2012 and her M.S. degree in cartography and geography information systems from the Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, Beijing, in 2015. She is currently working toward her Ph.D. degree in electrical and computer engineering at the Instituto Superior Tecnico, University of Lisbon, Portugal. Since 2015, she has been with the Instituto de Telecomunicacoes, Lisbon, as a Marie Curie Early Stage Researcher of Sparse Representations and Compressed Sensing Training Network (SpaRTaN). SpaRTaN Initial Training Networks (ITNs) is funded by the European Union’s Seventh Framework Program (FP7-PEOPLE-2013-ITN) and is part of the Marie Curie Actions–ITN funding scheme. Her research interests include hyperspectral image denoising, inpainting, spectral unmixing, superresolution, and compressive sensing.

The second prize was presented to Daniele Marinelli (Figure 17) with the citation “for the paper ‘Fusion of Multitemporal Lidar Data for Individual Tree Crown Parameter Estimation on Low Density Point Clouds.’” Marinelli’s advisor is Prof. Lorenzo Bruzzone from the University of Trento, Italy. Marinelli received the laurea (B.S. equivalent) degree in electronics and telecommunications engineering and the laurea magistrale (M.S. equivalent) degree (summa cum laude) in telecommunications engineering from the University of Trento in 2013 and 2015, respectively. Currently, he is pursuing his Ph.D. degree in information and communication technologies at the Remote Sensing Laboratory, University of Trento. His research interests include the analysis of multitemporal light detection and ranging to study the dynamics of forests and multitemporal hyperspectral data for change detection. He received the 2015 Best Italian Master Thesis prize in the area of remote sensing from the Italy Chapter of the IEEE GRSS.

### **IEEE MIKIO TAKAGI STUDENT PRIZE**

The IEEE Mikio Takagi Student Prize, honoring the career of Prof. Takagi, was established to recognize a student who has presented an exceptional paper at IGARSS. The 2018 IEEE Mikio Takagi Student Prize was presented to Tianlin Wang (Figure 18) with the citation “for the paper ‘Characterization of the Transmit Power and Antenna Pattern of the GPS Constellation for the CYGNSS mission.’” Wang’s advisor is Prof. Christopher Ruf from the University of Michigan, Ann Arbor. Wang received his B.E. degree in electrical engineering from East China University of Science

*(continued on p. 110)*



Chapter 7 deals with ancillary aspects of remote sensing, i.e., orbital mechanics and various elements of cartography. The 30-page coverage provides the reader with an appreciation of how satellite height is related to satellite orbit and the repeat cycle, how georectification tools are used to generate continuous maps and images, and the pros and cons of different types of map projections.

The next 300 pages of the book, encompassing Chapters 8–11, focus on remote sensing applications as applied to the atmosphere, ocean, and land, plus a separate chapter on cryospheric applications. These are panoramic presentations that profile the entire system, including the specific satellite configurations operated by NASA, the European

Space Agency, and other space agencies; data acquisition systems; and data products made available by those satellite sensors. It is very comprehensive and an excellent source for further study by graduate students. The book concludes with a short chapter about small satellite constellations.

With over 500 references, this 841-page book is a must-adopt textbook for any introductory course on remote sensing. After gaining the knowledge and experience made available by this book, a graduate student can pursue research in a specialized field of remote sensing with confidence and a clear perspective. For the practitioner of remote sensing, this book is a superb reference and guide.

**GRS**

## CONFERENCE REPORTS (continued from p. 84)



**FIGURE 19.** IGARSS 2019 General Chair Akira Hirose (left) receives well wishes for a successful symposium from IGARSS 2018 General Chair Jose Moreno.

and Technology, Shanghai, in 2009, and his M.S. degree in radio physics from Fudan University, Shanghai, China, in 2012. He is currently pursuing his Ph.D. degree in electrical engineering at the University of Michigan, Ann Arbor. His work focuses on level-1 calibration/validation and level-2 wind-speed retrieval for the Cyclone Global Navigation Satellite System NASA Earth Venture mission. His research interests include microwave remote sensing, GNSS reflectometry, and RF circuits.

### **SOME WORDS OF THANKS**

The IEEE GRSS Awards Committee thanks the evaluators of IGARSS 2018 technical sessions; the editorial boards

of *IEEE Transactions on Geoscience and Remote Sensing*, *IEEE Geoscience and Remote Sensing Letters*, and *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*; the IEEE GRSS Publications Awards Committee; the GRSS Symposium Awards Committee; the GRSS Special Awards Committee; and the GRSS Student Prize Paper Awards Committee for the valuable input they provided during the awards process.

We also encourage all GRSS members to actively participate in nominating distinguished colleagues for these major GRSS awards, including the IEEE GRSS Distinguished Achievement Award, IEEE GRSS Outstanding Service Award, IEEE GRSS Education Award, and IEEE GRSS special awards, such as the IEEE GRSS Early Career Award, IEEE GRSS David Landgrebe Award, and IEEE GRSS Regional Leader Award. GRSS members can nominate papers for the publication awards by following the instructions on the GRSS home page (<http://www.grss-ieee.org/about/awards/>).

### **BEST WISHES FOR A SUCCESSFUL IGARSS 2019**

The general chair of IGARSS 2018, Jose Moreno, turned over responsibility for the symposium to IGARSS 2019 General Chair Akira Hirose, with his best wishes for a successful symposium in Yokohama, Japan, 28 July–2 August 2019 (Figure 19). The 2019 symposium theme is Disasters and Environment. Visit <https://www.igarss2019.org> for further information.

We look forward to seeing you in Yokohama at IGARSS 2019!

**GRS**