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Instructors for GNSS Solutions® Tutorials prior to ION GNSS 2009

September 21-22, 2009, Marriott Savannah Riverfront, Savannah, GA

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Dr. Chris G. Bartone, P.E. is a professor at Ohio University with over 26 years of profession experience in communications, navigation, and surveillance systems. He received his Ph.D.EE from Ohio University in 1998, a MSEE from the Naval Postgraduate School in 1987, and BSEE from Penn State in 1983. He previously worked for the Naval Air Warfare Center, performing RDT&E on CNS systems. Chris received the RTCA William E. Jackson Award in 1998 for his outstanding contribution to aviation in the area of DGPS. At Ohio University, Dr. Bartone has developed and teaches a number of GPS, radar, and wave propagation classes. His research concentrates on all aspects of navigation. He is a member of the ION, the IEEE, SAE, and the International Loran Association. He has been very active with the ION: chaired several programs; Eastern Region VP; Air Representative; Chair of the ION Outreach Committee; and is currently the Editor of the ION Virtual Navigation Museum. Chris is a licensed profession engineer in the state of Ohio.



Thomas A. Stansell is a pioneer of satellite navigation with over 49 years of experience, beginning in 1960 at the Johns Hopkins University Applied Physics Laboratory, later with Magnavox, Leica, and now an independent consultant. He has lead many firsts in Transit, GPS, and Glonass receiver technology and played a key role and contributed crucial ideas to the design of all modernized GPS signals: L5, L2C, M-code, and L1C, with lead roles for L2C and L1C. He is an ION Fellow and has received multiple awards, including: GPS JPO Navstar, ION Weems, IEEE PLANS Kershner, and ION Kepler. Tom is an influential GPS consultant advising the GPS Wing and other organizations on GNSS modernization issues.

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Dr. Hans-Jürgen Euler has over 2 decades of experience with GPS and its applications including precise surveying in post-processing and real-time. In the late 80's, as a Ph.D student at Technical University of Darmstadt, Germany, he pioneered the fast integer ambiguity resolution technique. These fundamental methods are still the key factor for fast and robust phase integer ambiguity resolution. In 1990 he worked at The Ohio State University on inertial with kinematic GPS followed by developments for real-time applications at Terrasat, Germany. For 14 years at Leica Geosystems he developed the GPS algorithms for real-time and post-processing software. In 2002 he became a Leica GNSS Research Fellow. For more than 10 years he has worked actively in the RTCM Subcommittee 104 on interoperable standards, where he serves as Chair of the RTCM SC104 working groups for network RTK and Galileo. Since 2006 Hans-Jürgen works for his own company inPosition gmbh in Switzerland. He consults and concentrates on development for positioning applications with a particular focus on GNSS including Network RTK.



Dr Tony Pratt has over 40 year of experience with Signal Processing and GPS. He graduated with a B.Sc. and Ph.D. in Electrical Engineering from Birmingham University, UK in 1967. He has held teaching positions at Loughborough University, UK, Yale University; IIT, New Delhi, University of Copenhagen, and holds a full special professorship at University of Nottingham; his teaching is primarily in signal processing, electronics, probability theory, and satellite navigation system design. He has worked for or consulted to industry for Navstar Ltd, Peek, Parthus, QinetiQ Ltd, UK, Cambridge Positioning Systems, now part of the CSR plc group, and European Space Agency. Dr. Pratt is a Consultant to the UK Government in the development of the Galileo Satellite System and has played key roles in the signal design and international negotiations. He runs two companies, OrbStar Consultants and OrbStar Ltd providing various services to the GNSS sector. Dr Pratt has published numerous papers on signal processing, sonar, and satellite navigation. He published more than 50 papers and holds over 40 patents.

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Dr. Christophe Macabiau graduated as an electronics engineer in 1992 from the ENAC (Ecole Nationale de l'Aviation Civile) in Toulouse, France. Since 1994, he has been working on the application of satellite navigation techniques to civil aviation. He received his Ph.D. in 1997 and has been in charge of the signal processing lab of the ENAC since 2000. His research now also applies to vehicular, pedestrian and space applications, and includes advanced GNSS signal processing techniques for acquisition, tracking, interference and multipath mitigation, GNSS integrity, as well as integrated GNSS-inertial systems and indoor GNSS techniques.



Dr. Olivier Julien is an assistant professor with the Signal Processing and Telecommunications laboratory of ENAC, Toulouse, France. He received his PhD from the Department of Geomatics Engineering at the University of Calgary, Canada. He is involved in many R&D projects including GNSS receiver design, multipath and interference mitigation techniques, and GNSS interoperability. He is the recipient of the 2006 Bradford W. Parkinson award.



Dr. Sanjeev Gunawardena is a Senior Research Engineer and Co-Principal Investigator with the Ohio University Avionics Engineering Center (AEC). He is the primary developer of multi-frequency instrumentation-grade GNSS receiver RF front-ends, field programmable gate array (FPGA)-based next-generation GNSS processors, and high performance multi-sensor data collection systems for scientific research at AEC. In 2002, he demonstrated the first-documented realtime continuously-processing implementation of the FFT-based GNSS parallel code correlation algorithm and the first known realtime reconfigurable GPS receiver employing both time and frequency-domain processing in its baseband processor. He was awarded the 2007 RTCA William E. Jackson Award for his outstanding contribution to aviation for the application of transform-domain GNSS receiver technology for high-fidelity GPS performance monitoring. Dr. Gunawardena received B.S. in engineering physics, B.S.E.E., M.S.E.E. and Ph.D. in electrical engineering from Ohio University. He has taught courses in ASIC design,

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	VHDL, FPGA design, GNSS signal processing and advanced satellite navigation.
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Dr. Demetrios Matsakis is Head of the U.S. Naval Observatory's Time Service Department and has been employed at the USNO for almost 30 years. He has worked on time scales, atomic fountains, trapped-ion clocks, pulsars, VLBI (Very Long Baseline Interferometry), CEI (Connected Element Interferometry), atmospheric modeling, water vapor radiometers, maser amplifiers, and molecular radio astronomy. He received his Ph.D. in Physics at U.C. Berkeley studying under Dr. Charles Townes and his undergraduate degree in Physics from MIT. Dr. Matsakis has published over 100 scientific papers, and is ex-President of the International Astronomical Union's Commission on Time. He teaches in a private capacity.



Dr. Rama Rao is a Principal Engineer at the MITRE Corporation where he works on problems related to antenna technology for GPS navigation systems, EHF military satellite communications systems and terrestrial communications covering a wide range of frequency bands. He received his Ph. D degree from Harvard University where he also served as an Assistant Professor of Applied Physics. Prior to joining MITRE he held technical staff positions at M. I. T. Lincoln Laboratory and at the Sperry Research Center ; he was also a Research Associate at M.I.T. and an Adjunct Professor at Northeastern University in Boston. Dr. Rao holds ten U.S. patents and his last three patents are related to GPS antennas. He is the lead author of a forthcoming book on "GNSS Antennas" to be published by Artech House.



Dr. Kevin Dutton received his BS in Aeronautical Engineering from Rensselaer Polytechnic Institute in 1988 and his MS degree in Astronautics from the George Washington University in 1993. In 1989 he began work at NASA Langley Research Center on advanced spacecraft trajectory optimization. In 1993 he worked in the area of GPS to obtain his PhD in EE from Ohio University in 2003, studying various aspects of the GPS and INS, including attitude determination, relative navigation, and tightly coupled GPS/INS Kalman filter design. In 2004, Dr. Dutton accepted a position with Honeywell in Clearwater, Florida as the lead

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	designer of the Sea-Based JPALS GPS/INS relative navigation Kalman filter.
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	<p>Dr. Gebre-Egziabher is an associate professor of Aerospace Engineering and Mechanics at the University of Minnesota, in Minneapolis, Minnesota. His research is in the areas navigation, guidance and control with a particular emphasis on application of estimation theory to avionics sensor fusion and system integration issues. Dr. Gebre-Egziabher received a Bachelor of Science degree in Aerospace Engineering from the University of Arizona, a Master of Science degree in Mechanical Engineering from George Washington University and a Ph.D. in Aeronautics and Astronautics from Stanford University.</p>
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	<p>Dr. Andrey Soloviev is a Research Assistant Professor at the University of Florida. Previously he served as a Senior Research Engineer at the Ohio University Avionics Engineering Center. He holds B.S. and M.S. in Applied Mathematics and Physics from Moscow University of Physics and Technology and a Ph.D. in Electrical Engineering from Ohio University. His current research focuses on all aspects of multi-sensor integrated navigation and applications of synthetic aperture signal processing techniques for GNSS. Andrey currently serves as the ION Land Representative. He received the RTCA William E. Jackson Award in 2002 for the development of frequency-domain INS algorithms and the ION Early Achievement Award in 2006 for outstanding contributions to deeply integrated Inertial/GPS and advanced GPS signal processing.</p>
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Dr. Mohinder S. Grewal, P.E., is a Professor of Electrical Engineering at California State University, Fullerton (CSUF). He was an architect of the GEO Uplink Subsystem (GUS) for WAAS, including the GUS clock steering algorithm. He co-authored "Kalman Filtering Theory & Practice Using MATLAB," *Third Edition*, Wiley & Sons, 2008, and "Global Positioning Systems, Inertial Navigation, & Integration," *Second Edition*, Wiley & Sons, 2007. Grewal has published over 50 papers in IEEE and ION refereed journals and proceedings, including the ION "Redbook," (Volume VI), and numerous technical reports. Dr. Grewal was listed in "50+ GPS Leaders to Watch" in GPS World May 2007 issue. In February 2009, he received the Orange County Engineering Council (OCEC) Distinguished Engineering Educator Award. Dr. Grewal is a Senior Member of IEEE, Fellow of the Institute for the Advancement of Engineering, and member of the Institute of Navigation. He is a registered engineer in the State of California.