JOURNAL OF GUIDANCE, CONTROL, AND DYNAMICS
Vol. 33, No. 1, January–February 2010

Annual Business and News: Beginning the 33rd Year

THIS past year has been another successful one for the *Journal of Guidance, Control, and Dynamics*. Four hundred and forty-five papers (57% from outside the United States) were submitted for review from October 2008 through September 2009. From journal inception through last September, 9560 submissions have been received, with almost 5000 since I became Editor-in-Chief in 1996.

The AIAA Publications Committee has established a goal that, on average, papers in the journals should be printed within a year of submission. To meet that goal, 80% more pages were published during the year than two years ago and 10% more than last year in an attempt to decrease the backlog in papers that are ready to be published. I am pleased to say that the last six issues through September–October 2009 had an average submission-to-publication time of 321 days per paper and the September– October 2009 issue had an average of 274 days, or roughly nine months. As explained in the next paragraph, on average, it takes about six months to accept a paper. That means that, on average, acceptance to publication is about three months. Given that the *Journal of Guidance, Control, and Dynamics* is only published every two months, it seems that we have now achieved a good balance and will be publishing about 30 papers per issue.

Our Associate Editors are doing an outstanding job conducting reviews that are consistently high in quality and that meet the publication timeline goal. Here are some statistics on the papers for which they made final decisions during the 12-month period from October 2008 to September 2009, with the corresponding numbers for the previous year in parentheses.

1) Number of papers decided: 446 (417)
2) Number of papers accepted: 182 (183)
3) Number of papers declined: 145 (144)
4) Number of papers withdrawn, transferred, or other: 119 (90)
5) Average days from submission until:
   a) An author of a declined paper is notified: 91 (92) days
   b) The Associate Editor asks for a revision to a paper that is expected to be accepted: 111 (98) days
   c) A paper is accepted after revision: 169 (176) days

On average, the Associate Editors assigned the first reviewer in nine days. I am very proud of the performance of our Associate Editors, who control the quality of the *Journal of Guidance, Control, and Dynamics*, and the responsiveness of most authors in getting their revisions done quickly. Very few need prods to complete their work on time.

Feedback from contributors to the Editors has also been very positive. Authors can fill out a survey in WriteTrack once they have received a decision on their paper. Results from October 2008 through September 2009 are as follows. Eighty-nine percent ranked the overall time required for manuscript submission to final decision as either excellent (68%) or good (19%). Eighty-eight percent rated the quality and usefulness of the reviews as either very detailed, accurate, and helpful (59%) or fairly useful (29%). The participants in the survey had submitted either one manuscript to AIAA journals (24%), two manuscripts (25%), or three or more manuscripts (51%). These are very positive statistics, especially with the number of repeat authors submitting to the journals.

With this issue, I am announcing reappointments to our editorial staff, with thanks for their continuing service as Associate Editors: Sivasubramanya Balakrishnan, *Missouri University of Science and Technology*; Robert Melton, *Pennsylvania State University*; Vivekanand Mukhopadhyay, *NASA Langley Research Center*; and Jurek Sasiadek, *Carleton University.*

Deepest appreciation and good luck for the future goes to retiring Associate Editors John-Paul Clarke, *Georgia Institute of Technology*; Jesse Leitner, *NASA Goddard Space Flight Center*; and Michael McFarland, *Orbital Sciences Corporation*. Also, thanks to retired Book Editor, Christopher Hall, *Virginia Polytechnic Institute and State University* and to retired International Advisor, Yaakov Oshman, *Technion–Israel Institute of Technology.*

Recent and new appointments as Associate Editors are Emilio Frazzoli, *Massachusetts Institute of Technology*; Pini Gurfil, *Technion–Israel institute of Technology*; Paul Zarchan, *Massachusetts Institute of Technology*; and Yiyuan Zhao, *University of Minnesota*. The complete Associate Editor list, including biographical sketches, is presented in the following pages.

I express my gratitude to all the reviewers who perform the peer reviews necessary to maintain the quality of the *Journal of Guidance, Control, and Dynamics*. The list of reviewers who contributed between 1 October 2008 and 30 September 2009 follows the list of Associate Editors. Even though the system is electronic, a few names are always missed. I apologize to any reviewers whose names may have been inadvertently omitted.

Special acknowledgments go to the individuals who served as liaisons between the *Journal of Guidance, Control, and Dynamics* and an AIAA Technical Committee (TC): David Doman, *U.S. Air Force Research Laboratory*, and Yaakov Oshman, with the Guidance, Navigation, and Control TC; Ronald Proulx, *Draper Laboratory*, with the Astrodynamics TC; Dan DeLaurentis, *Purdue University*, with the Air Transportation Systems TC; and Sanjay Garg, *NASA John H. Glenn Research Center at Lewis Field*, with the Intelligent Systems TC.

Thanks go to all the publications staff at AIAA Headquarters, particularly Amanda Maguire, Becky Rivard, and Michael McGinnes. These dedicated individuals work at the highest standards in producing all the AIAA journals.

Finally, I continue to encourage communications between our readers and any member of the editorial staff. I believe we did a good job last year in covering the span of interests of our readers and in responding quickly to communications. We can always do better and we are willing to listen; please contact us.

George T. Schmidt
Editor-in-Chief

Editor-in-Chief

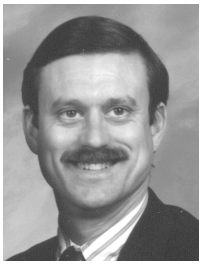
GEORGE T. SCHMIDT has been Editor-in-Chief of the *Journal of Guidance, Control, and Dynamics* since 1996. He is currently a Lecturer in aeronautics and astronautics at the Massachusetts Institute of Technology (MIT) and an industry consultant in guidance, navigation, and control. In 2007 he retired as the Director of Education at the Charles Stark Draper Laboratory. Before that position he was the Leader of the Guidance and Navigation Division and Director of the Draper Guidance Technology Center. His major technical activities have been in control system design for missiles, aircraft, and manned spacecraft; Kalman filtering applications; and integration techniques for high-resolution synthetic aperture radars, satellite navigation systems, and inertial sensors. He has served the NATO Research and Technology Organization (formerly AGARD) in many positions, including as a U.S. Member of the Guidance and Control Panel. He is currently Director of the NATO Systems and Electronics Technology Panel, Lecture Series on Low Cost Navigation Sensors and Integration Technology. He is a Fellow of the AIAA, a Life Fellow of the Institute of Electrical and Electronics Engineers (IEEE), and an elected Member of the Russian Federation, Academy of Navigation and Motion Control. He is a Distinguished Lecturer for the IEEE Aerospace and Electronic Systems Society. He has received several awards, including the AIAA International Cooperation Award in 2001 and the NATO Research and Technology Organization's highest technical award, the von Kármán Medal in 2005. He is author or contributing author of more than 80 technical papers, reports, encyclopedia articles, and books. He received his S.B. and S.M. degrees in aeronautics and astronautics from MIT and his Sc.D. in instrumentation from MIT.

Associate Editors

MARUTHI R. AKELLA has interests in the fields of dynamic systems theory and nonlinear control for aeromechanical systems. The overall emphasis of his research specifically involves fundamental investigations into high-performance adaptive identification algorithms and control theory for clusters of uncertain dynamic systems, including mobile heterogeneous sensor networks. His theoretical contributions have found applications in the study of spacecraft attitude dynamics, control of vision-guided robotics, and generation of dynamic models for flapping-wing micro air vehicles derived from the hummingbird-flight exemplar. Dr. Akella's current research is supported by the National Science Foundation, U.S. Office of Naval Research, and the U.S. Air Force Office of Scientific Research, encompassing control theoretic studies of cooperating teams of nonlinear systems accounting for the presence of measurement time delays and actuator saturation constraints. He is an Associate Fellow of the AIAA.

S. N. BALAKRISHNAN is currently a Professor of aerospace engineering in the Department of Mechanical and Aerospace Engineering and Engineering Mechanics at the University of Missouri—Rolla (UMR). He received his Ph.D. in aerospace engineering at the University of Texas at Austin. Dr. Balakrishnan's professional roles include Lead Engineer at Lockheed Electronics Company, where he worked in the space shuttle program; Scientist and Fellow, Center for Space Research, University of Texas at Austin; and Faculty Research Fellow, Wright Laboratory at Eglin Air Force Base. He teaches stability and control and advanced control courses at UMR. His research activities focus on neural networks in trajectory optimization and control, missile guidance, and multiple-target/multiple-sensor problems and estimation. He has authored/coauthored about 55 journal articles and refereed conference papers in these areas. Dr. Balakrishnan is a Member of the AIAA Guidance, Navigation, and Control Technical Committee; an Associate Fellow of the AIAA; and Director of the American Automatic Control Council.

MARK E. CAMPBELL is an Associate Professor in the Sibley School of Mechanical and Aerospace Engineering at Cornell University. He received his B.S. in mechanical engineering from Carnegie Mellon in 1990 and his M.S. and Ph.D. in aeronautics and astronautics from the Massachusetts Institute of Technology (MIT) in 1993 and 1996, respectively. Before joining Cornell in 2001, he was a Research Associate and Lecturer at MIT and an Assistant Professor in aeronautics and astronautics at the University of Washington. In 2005, he served as a Visiting Research Scientist at the Insitu Group, a company specializing in small autonomous aircraft, and as an Australian Research Council (ARC) International Fellow at the ARC Centre of Excellence for Autonomous Systems. His research interests are in the areas of autonomous systems (space, air, and ground), nonlinear estimation theory and sensor fusion, and human–autonomy interaction. He has been recognized from NASA for his modeling and control work on the Middeck Active Control Experiment, flown on STS-67 in 1995. He received the 2004 AIAA Best Paper Award, best paper at the 1998 Frontiers in Education conference, and Bennet Prize and Andrew Carnegie Scholar award at Carnegie Mellon. He has received teaching awards from Cornell, University of Washington, and the American Society for Engineering Education. He is an Associate Fellow of the AIAA and an Associate Director on the American Automatic Control Council Board of Directors (Member of International Federation of Automatic Control). He is a Member of the AIAA Guidance, Navigation, and Control Technical Committee, and he serves as an Associate Editor for the *IEEE Transactions on Aerospace and Electronics*.



RICHARD D. COLGREN, Senior Staff Engineer at the Lockheed Martin Aeronautics Company, is Lead Engineer for C4ISR and unmanned air vehicle (UAV) programs for Air Vehicle Sciences and Systems. He earned his B.S. in aeronautics and astronautics at the University of Washington and his M.S. and Ph.D. in electrical engineering systems at the University of Southern California. Previously, he was Flight Control Systems Lead for RECEE and Advanced Programs, and before that, he was the Integrated Product Team (IPT) Lead for Specialist Support on the DarkStar UAV (Tier III-). He was also IPT Lead for the Vehicle Management System on the Uninhabited Combat Air Vehicle and was Lead Flight Controls Engineer on the U-2S and on the Air Force Multivariable Control Theory project. He has served as Project Engineer/Principal Investigator on independent research and development projects, including Technologies for Reliable Autonomous Control, development of the Lockheed flight controls workstation, and the state reduction of structural dynamic models for control systems design. Previous work includes feasibility studies and preliminary/advanced design for flight control system concepts. Work on UAV projects includes Tier IIC, Tier III-, Tier III, X-33, UCAV, micro UAVs, the Wraith Remotely Piloted Vehicle, and other projects. Dr. Colgren is a past Chair of the Integrated Controls Subcommittee of the Lockheed Corporate Task Force. Dr. Colgren is an Aeronautical Engineering Evaluator for the Accreditation Board for Engineering and Technology, Inc./Aeronautical. He is an Associate Fellow of the AIAA and is a Member and past Secretary for the National Technical Committee on Guidance, Navigation, and Control.

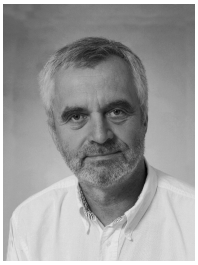
JOHN L. CRASSIDIS is a Professor of mechanical and aerospace engineering at the University at Buffalo (UB), State University of New York. He is also Associate Director of UB's Center for Multisource Information Fusion. He received his B.S., M.S., and Ph.D. in mechanical engineering from the State University of New York at Buffalo. Before joining UB in 2001, he held previous academic appointments at Catholic University of America from 1996 to 1998 and Texas A&M University from 1998 to 2001. From 1996 to 1998, he was a NASA Postdoctoral Research Fellow at NASA Goddard Space Flight Center, where he worked on a number of spacecraft projects and research ventures involving attitude control systems. He is the principal author of the textbook *Optimal Estimation of Dynamic Systems* (CRC Press, 2004) and has authored or coauthored more than 100 journal and refereed conference papers. He served as the Technical Program Co-Chair of the AIAA Guidance, Navigation, and Control (GN&C) conference in 2001 and as the General Chair in 2003. He has received many awards for his achievements, including the Best Paper Award for both the 2001 and 2003 AIAA GN&C conferences, the 2006 AIAA Sustained Service Award, and the Society of Automotive Engineers 2006 Ralph R. Teetor Educational Award. His current research interests include nonlinear estimation and control theory, spacecraft attitude determination and control, attitude dynamics and kinematics, and robust vibration suppression. Since 1997 he has been a Member of the AIAA Technical Committee on GN&C, where he currently serves as Chair. He is an Associate Fellow of the AIAA.

DAVID B. DOMAN is a Senior Aerospace Engineer with the Air Vehicles Directorate of the U.S. Air Force Research Laboratory (AFRL) at Wright–Patterson Air Force Base in Dayton, Ohio. He received his B.S. degree in aerospace engineering from West Virginia University in 1991, his M.S. in aeronautics and astronautics from Purdue University in 1993, and his Ph.D. in aerospace engineering from Virginia Polytechnic Institute and State University in 1998. He completed the Aerospace Vehicles Test Course at the U.S. Air Force Test Pilot School in 2005. He is currently the Technical Area Lead for the Micro Air Vehicle Dynamics and Control Group in the Control Science Center of Excellence at AFRL. He has published over 110 refereed conference papers, journal articles, and technical reports and currently holds two U.S. patents. He was the corecipient of the 2003 Gen. Benjamin D. Foulois Award as well as the 2000 Dr. Courtland D. Perkins award for his technical contributions at the Air Vehicles Directorate of AFRL. He is an Associate Fellow of the AIAA; a Senior Member of the Institute of Electrical and Electronics Engineers; and a Member of the AIAA Technical Committee on Guidance, Navigation, and Control.

FIDELIS O. EKE is a Professor of mechanical and aeronautical engineering at the University of California (UC), Davis. He holds a Ph.D. in mechanical engineering from Stanford University. Before coming to UC Davis, he worked for six and a half years in the Guidance and Control Section of the Jet Propulsion Laboratory (JPL). Some of the major tasks he performed at JPL include the study of various aspects of the dynamics, control, and stability of spin-stabilized spacecraft; evaluation of the impact of flexibility on the design of controllers for large flexible space structures; and development of new formalisms for the study of the dynamics of multibody systems. He won a NASA award for his work on the design, development, and testing of the Galileo spacecraft's orbiter. He received another NASA award for his contributions to the development of a novel approach to component model reduction. He teaches courses in the dynamics and controls areas at UC Davis, and his research interests are mainly in the application of dynamics and controls to aerospace systems, especially attitude dynamics and control. He is a Senior Member of the AIAA.

RUSSELL J. ENNS is an Associate Technical Fellow at The Boeing Company. He received his B.A.Sc. from Simon Fraser University and his M.S. and Ph.D. in electrical engineering from Arizona State University. He has been developing fire and flight controls systems for McDonnell Douglas Helicopter Company/Boeing since 1993. He currently serves as a Technical Lead on the modernized flight control system for the Apache Longbow. He has either led, been a key designer, or acted as a consultant on a number of other flight control programs, especially those focusing on fly-by-wire technology. This includes unconventional systems such as the canard rotor wing and A-160 Hummingbird programs. His other research interests include neural-control systems and flight-control reconfiguration, with several refereed publications in these areas. He has been an invitee to the National Science Foundation Workshop on Reinforcement Learning and has had invited papers to the American Helicopter Society (AHS) Technical Specialists Meeting and International Joint Conference on Neural Networks. He has served for several years as a reviewer for the *Journal of Guidance, Control, and Dynamics* and *IEEE Transactions on Neural Networks*. He is a long-standing Member of the AIAA, Institute of Electrical and Electronics Engineers, and AHS.

EMILIO FRAZZOLI is an Associate Professor of Aeronautics and Astronautics with the Laboratory for Information and Decision Systems at the Massachusetts Institute of Technology. He received a Laurea degree in aeronautical engineering from the University of Rome, "La Sapienza," in 1994, and a Ph.D. degree in navigation and control systems from the Department of Aeronautics and Astronautics from the Massachusetts Institute of Technology in 2001. Between 1994 and 1997 he worked as an officer in the Italian Navy and as a spacecraft dynamics specialist for the European Space Agency Operations Centre and Telespazio. From 2001 to 2004 he was an Assistant Professor of Aerospace Engineering at the University of Illinois at Urbana–Champaign. From 2004 to 2006 he was an Assistant Professor of Mechanical and Aerospace Engineering at the University of California, Los Angeles. He is a Senior Member of the AIAA and of the Institute for Electrical and Electronics Engineers. He was the recipient of a National Science Foundation CAREER award in 2002. Dr. Frazzoli's main research interests lie in the general areas of planning and control for autonomous air/space/ground vehicles, cooperative control of mobile robotic networks, air traffic control, and large-scale transportation systems.



WODEK GAWRONSKI is a Principal Engineer at the Jet Propulsion Laboratory, California Institute of Technology. He received his M.S. (1968), Ph.D. (1970), and D.Sc. (1975) from the Gdansk University of Technology. He was a Professor at the Gdansk University of Technology (1970–1983), a Visiting Professor at the University of Hanover (1983–1986), and Senior National Research Council Fellow at the NASA Langley Research Center (1987–1989). His research interest is in the areas of structural dynamics, structural control, system identification, and antenna and radiotelescope pointing and control. At the Jet Propulsion Laboratory, he is responsible for the advanced development of the control systems of NASA Deep Space Network antennas. He was also a consultant on control system design to several radiotelescope projects, including the National Radio Astronomy Observatory 100 m Green Bank Telescope and the 50 m Large Millimeter Wavelength Telescope. He is an author of two books: *Balanced Control of Flexible Structures* (Springer, 1996) and *Dynamics and Control of Structures* (Springer, 1998). He is a Senior Member of the AIAA.

PINI GURFIL received his Ph.D. in aerospace engineering from the Technion–Israel Institute of Technology in 2000. From 2000 to 2003, he was with Princeton University's Department of Mechanical and Aerospace Engineering, where he served as Research Staff Member and Lecturer. In September 2003, Dr. Gurfil joined the Faculty of Aerospace Engineering at the Technion. Dr. Gurfil is founder and director of the Distributed Space Systems Laboratory at the Technion. Dr. Gurfil has been conducting research in astrodynamics, distributed space systems, vision-based navigation, optimization and multi-agent systems. He has published over 140 journal and conference articles in these areas. Dr. Gurfil is the Editor of the Elsevier Astrodynamics Book Series; Editorial Board Member in three aerospace engineering journals; Member of the AIAA Guidance, Navigation, and Control (GN&C) and American Astronautical Society (AAS) Spaceflight Mechanics Technical Committees; Associate Fellow of the AIAA, Member of IEEE; Member of AAS; Member of Sigma Xi; and an Affiliate Member of the Division on Dynamical Astronomy. He has served on the Program Committee of the American Control Conference and as Technical Area Chair for the AIAA GN&C Conference. Dr. Gurfil has received a number of awards, including the Gutwirth Award for Excellence in Scientific Research, and has served as Principal Investigator in funded research projects both at the Technion and at Princeton University. He is currently Principal Investigator on a number of projects in the fields of astrodynamics, distributed space systems, global navigation satellite systems, and multi-agent systems.

HARI B. HABLANI received his B.S. in mechanical engineering in 1972 from the Government College of Engineering and Technology and his M.S. in 1974 and Ph.D. in 1978 (both in aerospace engineering) from the Indian Institute of Science. He passed his M.S. with distinction and his Ph.D. with the P. S. Narayan Gold Medal. From 1978 to 1980, he was a Postdoctoral Fellow in the Department of Aeronautical and Astronautical Engineering, Purdue University. For the following two years, he was a NASA National Research Council Resident Associate at NASA Johnson Space Center. Since 1982, he has been with The Boeing Company (formerly Rockwell International), Flight Sciences and Advanced Design Group, where he is currently a Technical Fellow. For the past three years, he has been involved with the design of guidance, navigation, and control of spacecraft rendezvous. Earlier, he was responsible for detailed design and simulation of spacecraft and interceptor dynamics, control, determination, guidance, and navigation. Dr. Hablani has received numerous awards for his contributions, including the Leonardo de Vinci (the Spirit of the Renaissance) Engineer of the Year 1991 and patent and innovation awards. He has authored numerous publications, both internal and external. For the last two years, he has been presenting Boeing-wide, a course on guidance, navigation, and control of spacecraft and interceptors. He has been an Associate Fellow of the AIAA since 1994.

PING LU, Professor of aerospace engineering at Iowa State University, received his B.S. from the Beijing Institute of Aeronautics and Astronautics in 1982 and his M.S.E. and Ph.D. in aerospace engineering from the University of Michigan in 1984 and 1988, respectively. He worked as a Postdoctoral Fellow from 1988 to 1989 at the University of Michigan. Since 1990, he has been with Iowa State University. His research interests include aerospace guidance, nonlinear control theory and applications, and trajectory optimization. He is an Associate Fellow of the AIAA and was a Member of the AIAA Technical Committee on Guidance, Navigation, and Control (1994–2000).

MALCOLM MACDONALD obtained a B.Eng. in aeronautical engineering from the University of Glasgow in 2000. He completed full-time studies for his Ph.D. at the end of 2002, gaining a Research Assistant post within the Department of Aerospace Engineering at University of Glasgow until December 2004, graduating with his Ph.D. in July 2006. From 2005–2008 he worked at SciSys U.K., Ltd., on a range of ESA missions throughout the project life cycle, progressing to become a Senior Member of the technical staff, leading a team working across nonlinear dynamic systems and control, modeling and simulation, formation flying, unmanned autonomous systems, and advanced mission and concept studies. In July 2008 he joined the University of Strathclyde as a Member of the academic staff, where his research interests cover celestial mechanics, swarming systems, mission analysis and design, solar sailing, small spacecraft systems, and unmanned autonomous systems. He is a Senior Member of the AIAA.

ROBERT G. MELTON is a Professor of aerospace engineering at the Pennsylvania State University. He received his B.S. in physics from Wake Forest University in 1976 and his M.S. in physics (1979) and Ph.D. in engineering physics (1982) from the University of Virginia. His research includes work in celestial mechanics, non-Keplerian astrodynamics, trajectory optimization, optimum station-keeping for space-based interferometry, and satellite attitude dynamics and control. An Associate Fellow of the AIAA, he has served on its Astrodynamics Technical Committee and on the Applications Advisory Board of the *Journal of Guidance, Control, and Dynamic*. He is a Member of Sigma Pi Sigma and a Fellow of the American Astronautical Society, in which he has served as Chair of the Space Flight Mechanics Technical Committee and as Vice President–Technical and in which he is currently Vice President–Publications.

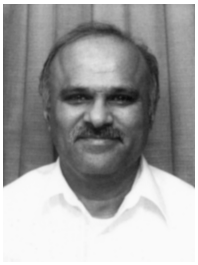
JAMES MITCHELL is a Technical Fellow with The Boeing Company. He has 30 years of experience in aircraft control system design, with the last 20 years being specifically involved in the design of fly-by-wire flight-control systems for fixed- and rotary-wing aircraft. He earned his B.S. in aeronautical engineering in 1974 from the Imperial College of Science and Technology. His early experience was with Westland Helicopters, where he was a member of a team developing a family of unmanned rotorcraft, which are now to be seen as objects of interest in the British Helicopter Museum. He continued his career with Canadair, where he was involved with the design of the Canadair Challenger business jet. He joined Boeing in 1979 as part of the flight controls team for the Boeing 767. His career at Boeing since then has included the Boeing 767 and Boeing 777 commercial transports, the Boeing—Sikorsky RAH-66 Comanche helicopter, and the Bell—Boeing V-22 and Bell—Boeing (now Bell–Agusta) 609 tiltrotor aircraft. He is now supporting the design of the flight control system for the Boeing 7E7 Dreamliner. A Member of the American Helicopter Society, AIAA, and Society of Automotive Engineers, Mr. Mitchell is also a Member of the Steering Committee for the Software System Safety Working Group chaired by Prof. Nancy Leveson of the Massachusetts Institute of Technology, which addresses areas of common interest between diverse industries that use software as a means of controlling safety critical functions.

VIVEKANAND MUKHOPADHYAY received his S.M. and Sc.D. in aeronautics and astronautics from the Massachusetts Institute of Technology in 1970 and 1972. He was awarded the President of India Gold Medal and B.Tech. at the Indian Institute of Technology in 1968. He is presently a Senior Research Engineer at NASA Langley Research Center. His prior positions include Assistant Professor, Indian Institute of Technology; Research Specialist, Planning Research Corporation; and Adjunct Associate Professor, George Washington University, Joint Institute for Advancement of Flight Sciences. He is an Associate Fellow of the AIAA and a recipient of the prestigious NASA Floyd Thompson Fellowship. He has 35 years of research and teaching experience in the areas of applied optimal control, aeroservoelasticity, and structural dynamics and control. He was a contributing author to the Academic Press series, "Advances in Controls and Dynamics"; the AIAA "History of Key Technologies" series; and "Benchmark Active Control Technology" special publications. His research interests are in the areas of robust control, active flutter suppression, multidisciplinary analysis, and optimization of advanced aerospace concepts. He has made key contributions to many NASA Langley projects, including drones for aeroelastic and structural testing, aeroelastic research wing, active flexible wing flutter suppression, advanced vehicle systems technology revolutionary concepts, blended wing—body vehicle design and optimization, efficient aerodynamic shape and integration, high-altitude long-endurance vehicle, crew exploration vehicle, and lunar surface access module design studies.

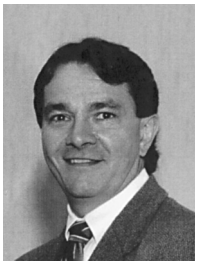
JUREK Z. SASIADEK is a Professor of aerospace engineering at Carleton University. He received his M.S. (1972), Ph.D. (1975), and D.Sc. from the Technical University of Wroclaw. His research interests focus in two main areas. The first is robotics, especially space robotics and unmanned autonomous vehicles. The second area involves guidance, navigation, and control, especially spacecraft and aircraft control and nonlinear control. In 1989–1991, Dr. Sasiadek was with the Canadian Space Agency, and in 1985–1987, he was a Technical Director for Alberta Research Council. He has authored or coauthored more than 180 journal and refereed conference papers. Professor Sasiadek is a Member of the AIAA Guidance, Navigation, and Control Technical Committee. He is an Associate Fellow of the AIAA, and he was a Program Chair of the 1994 AIAA Guidance, Navigation, and Control Conference. In August 2001, he was General Chair of the 2001 AIAA Guidance, Navigation, and Control Conference. Currently, he is the Chair of an International Federation of Automatic Control Robotics Technical Committee and the Chair of a Joint Robotics and Control Systems Societies chapter.

HANSPETER SCHAUB is an Associate Professor and an H. Joseph Smead Fellow of the Aerospace Engineering Sciences Department at the University of Colorado at Boulder. He earned his B.S., M.S., and Ph.D. in aerospace engineering at Texas A&M University. His 13 years of professional interests are in nonlinear dynamics and control applications, with a special emphasis on astrodynamics. He has performed research in spacecraft attitude and control, exploiting nonlinear dynamics of control-moment gyros to avoid classical control-moment gyro singularities, as well as extensive research in spacecraft formation-flying dynamics and control problems. His current interests include charged relative motion dynamics and control, as well as visual servoing of autonomous vehicles. Dr. Schaub's prior work experience includes four years at the Sandia National Laboratories Intelligent Systems and Robotics Center and four years at the Virginia Polytechnic Institute and State University Aerospace and Ocean Engineering Department as an Assistant Professor. He has authored about 40 peer-reviewed papers, presented 60 conference papers, published a textbook on analytical mechanics of space systems, and holds a patent on a noncontact position and orientation measurement system. He is an Associate Fellow of the AIAA and a Member of the American Astronautical Society.

DANIEL J. SCHEERES is the A. Richard Seebass Professor in the Department of Aerospace Engineering Sciences at the University of Colorado at Boulder. Before this, he was a Member of the Technical Staff in the Navigation Systems Section at the California Institute of Technology's Jet Propulsion Laboratory (1992–1997), and he held positions at the University of Michigan (1997–2007) and Iowa State University (1997–1999). He holds a B.S. in letters and engineering from Calvin College (1985) and a B.S.E. (1987), M.S.E. (1988), and Ph.D. (1992) in aerospace engineering from the University of Michigan. He has authored or coauthored over 100 papers and chapters in peer-reviewed journals and over 130 conference papers. His research interests include the dynamics, control, and navigation of spacecraft trajectories; the design of space missions; optimal control; planetary science; celestial mechanics; and dynamic astronomy. He is an Associate Fellow of the AIAA and serves on the AIAA Astrodynamics Technical Committee. Prof. Scheeres is a member of the American Astronautical Society, the American Astronomical Society's Division on Dynamical Astronomy and Division for Planetary Sciences, and the International Astronomical Union. He is also an Associate Editor for *Celestial Mechanics and Dynamical Astronomy* and *The Journal of the Astronautical Sciences*. He is the recipient of two NASA group awards for his work on the Near-Earth Asteroid Rendezvous (NEAR) mission, and Asteroid 8887 is named "Scheeres" in recognition of his contributions to the scientific understanding of the dynamic environment about asteroids.



M. BALA SUBRAHMANYAM received his B.S. (1970) in electrical engineering from the Regional Engineering College and his M.S. (1972) and Ph.D. (1975) in electrical engineering from the University of Iowa. Dr. Subrahmanyam has held faculty positions with Texas A&M University and the University of Missouri–Kansas City. He was also with the U.S. Naval Air Warfare Center, working in the area of research and development of flight control systems of advanced Naval aircraft. Currently, he is a Principal Systems Engineer with the Lockheed Martin Skunk Works, working on the flight control systems for hypersonic aircraft and automatic aerial refueling. He is also an Adjunct Professor with the Florida Institute of Technology. Dr. Subrahmanyam's research interests include the areas of guidance and control problems of aircraft and missiles, H-infinity control, and optimal control. He has published over 30 journal articles in these areas. In addition, he has written the books *Optimal Control with a Worst Case Performance Criterion and Applications* (Springer–Verlag, 1990) and *Finite Horizon H-infinity and Related Control Problems* (Birkhauser, 1995). He is an Associate Fellow of the AIAA.



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