

**AIAA Guidance, Navigation,
and Control Conference** www.aiaa.org/events/gnc

**AIAA Atmospheric Flight Mechanics
Conference** www.aiaa.org/events/afm

**AIAA Modeling and Simulation
Technologies Conference** www.aiaa.org/events/mst

**AIAA/AAS Astrodynamics
Specialist Conference** www.aiaa.org/events/asc

13-16 August 2012

Hyatt Regency Minneapolis

Minneapolis, Minnesota



EVENT PREVIEW

AIAA
The World's Forum for Aerospace Leadership

Contents

EVENT OVERVIEW	2
ORGANIZING COMMITTEES	2
BENEFITS OF ATTENDANCE	3
SESSIONS AT A GLANCE	4
SPECIAL EVENTS	5
EVENT AT A GLANCE	6
STUDENT PAPER COMPETITIONS	8
REGISTRATION INFORMATION	9
GENERAL CONFERENCE INFORMATION	10
CONTINUING EDUCATION COURSES	11

EVENT OVERVIEW

The AIAA Guidance, Navigation, and Control Conference, AIAA Atmospheric Flight Mechanics Conference, AIAA Modeling and Simulation Technologies Conference, and AIAA/AAS Astrodynamics Specialist Conference will combine in 2012 to provide the world's premier forum for presentation, discussion, and collaboration focused on science, research, and technology in these highly related fields as they relate to the aerospace industry. It will bring together experts from industry, government, and academia on an international level to cover a broad spectrum of issues concerning flight mechanics, modeling, simulation, and the guidance, navigation, and control of aerospace vehicles.



ORGANIZING COMMITTEES

AIAA Guidance, Navigation, and Control Conference

General Chair

Julie Thienel

NASA Goddard Space Flight Center

Technical Program Chairs

Jack W. Langelaan

The Pennsylvania State University

Lesley A. Weitz

The MITRE Corporation

AIAA Atmospheric Flight Mechanics Conference

General Chair

Steven C. Komadina

Northrop Grumman Aerospace Systems

Technical Program Chairs

Clay Harden

Honda Aircraft Company

Mark H. Lowenberg

University of Bristol

AIAA Modeling and Simulation Technologies Conference

General Chair

Steven D. Beard

NASA Ames Research Center

Technical Program Chairs

Steven D. Beard

NASA Ames Research Center

Che-Hang C. Ih

The Boeing Company

AIAA/AAS Astrodynamics Specialist Conference

AIAA General Chair

David B. Spencer

The Pennsylvania State University

AAS General Chair

Anil Rao

University of Florida

AIAA Technical Program Chair

Mark E. Pittelkau

Aerospace Control Systems, LLC

AAS Technical Program Chair

Anastassios Petropoulos

NASA Jet Propulsion Laboratory,
California Institute of Technology

BENEFITS OF ATTENDANCE

Why Attend?

- Meet other professionals from government, academia, and industry, including U.S. and international constituencies
- Learn from experts about the latest advancements and research in the field
- Listen to high-quality technical papers and presentations
- Network, discuss challenges, and share ideas during sessions, coffee breaks, and receptions

Who Should Attend?

- All levels of engineers, researchers, and scientists from government, academia, and industry
- Engineering managers and executives
- Business development personnel
- Young aerospace professionals
- Educators and students
- Press/media

What to Expect?

• Program

- Access to more than 700 technical papers and presentations
- Keynote speeches by renowned experts and decision makers during the plenary sessions
- Continuing Education courses to refresh your knowledge and keep professionals at their technical best
- Student paper competitions to encourage and engage young minds as they enter the aerospace industry

• Networking

- **New for 2012!** Stand-alone networking coffee breaks to allow even more time for making new contacts and continuing the discussions from technical sessions
- Sunday welcome reception and Wednesday networking luncheon
- Awards luncheon to recognize outstanding members of the guidance, navigation, and control, atmospheric flight mechanics, modeling and simulation, and aerodynamics technical communities and celebrate their contributions to the industry
- Minneapolis activities, such as seeing a Minnesota Twins baseball game at the fabulous new Target Field, and exploring the remarkable Mall of America



SESSIONS AT A GLANCE

AIAA Atmospheric Flight Mechanics Conference Sessions

Aeroservoelastic Control, Modeling, Simulation, and Optimization
Aircraft Dynamics
Aircraft Flying Qualities
Bio-Inspired Flight Mechanics
Linear and Nonlinear Equations of Motion
Loss of Control
Nonlinear Dynamics in Aerospace
Projectile, Missile, and Launch Vehicle Dynamics and Control
Reentry and Aeroassist Vehicle Technology
System Identification and Parameter Estimation
UAVs and Unmanned Systems
Unsteady and High Angle-of-Attack Aerodynamics
Vehicle Flight Test

AIAA Guidance, Navigation, and Control Conference Sessions

Advanced Control of Nonlinear Systems in Honor of the 70th Birthday of Prof. Mark Balas
Airborne Separation
Aircraft Flight Control Applications
Control in Aerospace Robotics
Control Theory and Analysis
Decision Support
Environmental Impact of Aviation
Estimation
Fixed-Wing Micro Air Vehicles
Flapping Wing Micro Air Vehicles
Flight Control Applications in System Modeling, Identification, and Estimation
Flight Control Test Evaluations
Flight Experience of Cassini Spacecraft Attitude Control at Saturn
Human and Autonomous/Unmanned Systems
Intelligent Control in Aerospace Applications
Loss of Control
Missile Systems Control and Autopilots

Missile Systems Guidance and Trajectory Design
Missile Systems Navigation and Control
Motion Planning in Aerospace Robotics
Multi-Body Mission Planning and Guidance for Missile Systems
Multi-Vehicle Control
Navigation
Nonlinear Control in Flight Control Applications
Optimal Control Application in Flight Control System
Orion GNC Design and Analysis
Quadrotors and Aerospace Robotics
Recent Advances in Adaptive Control
Robotic Systems in Aerospace
Robust Aircraft Flight Control
Robust Launcher Flight Control System Design Verification and Validation
Rotary-Wing Micro Air Vehicles
Sensing Systems in Aerospace Robotics
Sensor Systems for Guidance, Navigation, and Control
Space Robotics
Spacecraft Exploration and Transportation GNC
Spacecraft GNC: Attitude Control
Spacecraft GNC: Attitude Estimation
Spacecraft GNC: Guidance
Spacecraft GNC: Navigation
Spacecraft GNC: Orbit Control and HIL Simulator
Tracking and Planning
Trajectory Design and Guidance in Flight Control Applications
Trajectory Prediction
UAS Motion Video Tracking and Surveillance
Uncertainty Characterization
Vision-Based Micro Air Vehicle Control

AIAA Modeling and Simulation Technologies Conference Sessions

Aerodynamic Modeling and Simulation
Aeroelastics
Air Traffic Management
Aircraft Modeling
Aviation Safety

Hardware-in-the-Loop Simulation
Human Operators
Loss of Control
Model/Simulation-Based Design and Analysis
Modeling and Simulation for Flight Control Analysis
Modeling Tools and Techniques
Motion Systems
Simulation Environments and Framework
Simulation Validation and Verification
Simulator Design, Verification, and Validation
Space Systems
Systems and Environmental Modeling Techniques
Unmanned Aerial Vehicles
Upset Recovery
Vehicle Subsystems
Vision Systems

AIAA/AAS Astrodynamics Specialist Conference Sessions

Asteroid and Comet Missions
Attitude Control
Attitude Determination
Attitude Dynamics and Control
Constellations
Formation Flying
Large Space Structures, Tethers, and Solar Sails
Low-Thrust Missions
Lunar Missions
Near-Earth Objects
Orbit Determination
Orbital Debris and Conjunction Analysis
Orbital Dynamics, Perturbations, and Stability
Planetary Missions
Rendezvous, Relative Motion, and Proximity Missions
Space Situational Awareness and Surveillance
Spacecraft Guidance
Spacecraft Navigation
Trajectories about Libration Points
Trajectory and Maneuver Design and Optimization

For the full conference program, including all paper titles and speakers, visit
www.aiaa.org/events/gnc; www.aiaa.org/events/afm;
www.aiaa.org/events/mst; or www.aiaa.org/events/asc.

SPECIAL EVENTS

Plenary Sessions

Each day of the conference kicks off with a keynote address. These presentations are given by renowned experts and decision makers in the industry.

Monday, 13 August 2012

0800–0900 hrs

AIAA Modeling and Simulation Technologies Conference Plenary

Speaker: Keith Colmer, Test Pilot, Virgin Galactic, Mojave, CA

Tuesday, 14 August 2012

0800–0900 hrs

AIAA Guidance, Navigation, and Control Conference Plenary

Speaker: Mason Peck, Chief Technologist, NASA Headquarters, Washington, DC

Wednesday, 15 August 2012

0800–0900 hrs

AIAA Atmospheric Flight Mechanics Conference Plenary

Speaker: Scott Winship, Vice President Advanced Concepts Air and Land, Northrop Grumman Corporation, San Diego, CA

Welcome Reception

A “happy hour” welcome reception will be held Sunday, 12 August 2012, 1700–1900 hrs. A ticket for the reception is included in the conference registration fee where indicated. Additional tickets for guests may be purchased upon registration or on site.

Women in Engineering Luncheon

The Women in Engineering Luncheon, hosted by the GNC TC, will be held Monday, 13 August 2012, 1200–1330 hrs. The speaker will be Lillian Zarrelli Ryals, Vice President and Deputy General Manager, Center for Advanced Aviation System Development (CAASD), The MITRE Corporation. Women participating in any of the co-located conferences are invited to attend at no

charge. Women are underrepresented in the engineering sciences and industry, and this luncheon provides an opportunity for women to meet informally, network, discuss experiences, and identify women who are leaders in their fields for recognition by AIAA.

Networking Coffee Breaks

New for 2012! In response to attendee feedback, stand-alone networking coffee breaks have been added to the program to allow even more time for making new contacts, continuing the discussions from technical sessions, or checking emails and voicemails to keep in touch with the office while you are at the conference. Times are indicated in the program.

Minnesota Twins Major League Baseball Game

AIAA has purchased a block of tickets at the new Target Field, home of Major League Baseball’s Minnesota Twins! Tickets are for the Monday evening, 13 August 2012, game against the Detroit Tigers. Target Field is rated the “#1 Fan Experience” in all of major league sports by ESPN Magazine. Tickets are \$40 and include \$15 worth of refreshments of your choice. The stadium is within walking distance of the hotel. A separate ticket is required and must be purchased by the early bird registration deadline of **16 July 2012** to reserve your ticket. Tickets are non-refundable (rain or shine).

AIAA Awards Luncheon

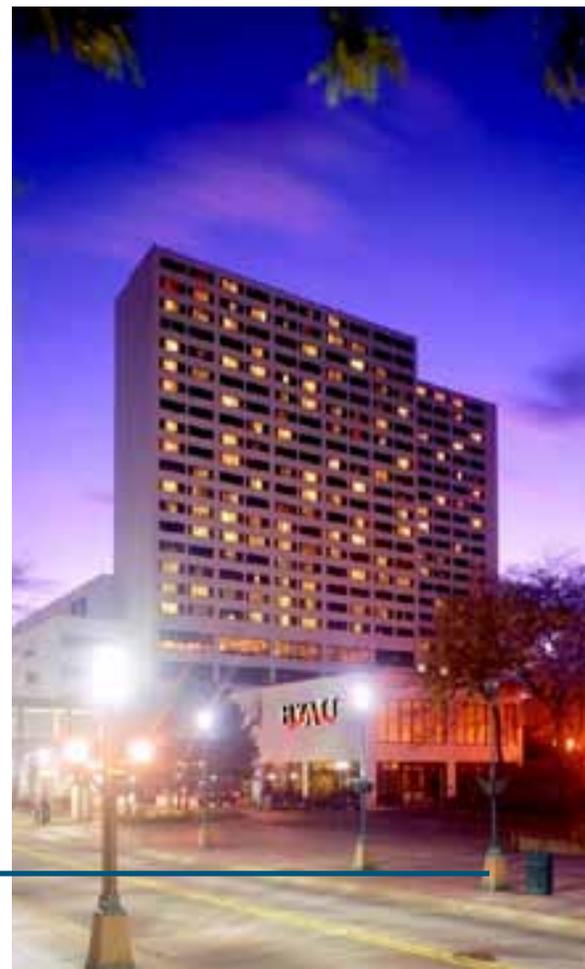
The AIAA Awards Luncheon will be held Tuesday, 14 August 2012, 1200–1400 hrs. The luncheon will start with the presentation of awards, and end with a keynote presentation by Bo Bobko, SimLabs Program Manager, SAIC, and retired astronaut, NASA Ames Research Center. This year’s luncheon is hosted by the AIAA Modeling and Simulation Technologies Conference. The cost of the luncheon is included in the conference registration fee where indicated. Additional tickets for guests may be purchased upon registration or on site.

Shuttle Buses to Mall of America

AIAA will be running shuttle buses between the Hyatt Regency Minneapolis and Mall of America on Tuesday evening, 14 August 2012, starting at 1830 hrs and ending at 2130 hrs. All conference attendees and guests are welcome to use the shuttles. Since opening its doors in 1992, Mall of America has revolutionized the shopping experience and become a leader in retail, entertainment, and attractions. The mall is so large that 32 Boeing 747s could fit inside!

Networking Luncheon

A networking buffet luncheon will be held Wednesday, 15 August 2012, 1200–1330 hrs. Join your colleagues to catch up on the technical discussions of the week and solidify new contacts. The cost of the luncheon is included in the conference registration fee where indicated. Additional tickets for guests may be purchased upon registration or on site.



EVENT AT A GLANCE

	Saturday, 11 August	Sunday, 12 August	Monday, 13 August	
0700 hrs			Speakers' Briefing	
0800 hrs	Continuing Education Courses	Continuing Education Courses	Plenary Session	
0900 hrs			Networking Break	
1000 hrs			Technical Sessions	
1100 hrs				
1200 hrs				Lunch Break/WIE Luncheon
1300 hrs				Technical Sessions
1400 hrs				
1500 hrs			Registration (1500-1900 hrs)	Networking Break
1600 hrs				Technical Sessions
1700 hrs				"Happy Hour" Welcome Reception
1800 hrs				
1900 hrs		Twins Baseball Game (Extra Ticket Required)		
2000 hrs				
2100 hrs				

Tuesday, 14 August	Wednesday, 15 August	Thursday, 16 August	
Speakers' Briefing	Speakers' Briefing	Speakers' Briefing	0700 hrs
Plenary Session	Plenary Session	Technical Sessions	0800 hrs
Networking Break	Networking Break		0900 hrs
Technical Sessions	Technical Sessions	Networking Break	1000 hrs
		Technical Sessions	1100 hrs
Awards Luncheon	Networking Luncheon		1200 hrs
	Technical Sessions		1300 hrs
Technical Sessions	Networking Break		1400 hrs
Networking Break	Technical Sessions		1500 hrs
Technical Sessions			1600 hrs
Shuttle Buses to Mall of America			1700 hrs
			1800 hrs
			1900 hrs
			2000 hrs
			2100 hrs

STUDENT PAPER COMPETITIONS

Best Atmospheric Flight Mechanics Student Paper Competition

The AIAA Atmospheric Flight Mechanics Technical Committee, with the support of Calspan Corporation (www.calspan.com), is sponsoring a Best Student Paper Competition at the 2012 AIAA AFM Conference. Entrants will be judged by Technical Committee members and the winner will receive a certificate and \$500 award at the conference awards luncheon. To be eligible for this award, the student must be the primary author of the paper and the work must have been performed while the author was a student. **Students will present their papers in the relevant conference technical sessions on Monday and Tuesday morning.** The scoring for the award will be equally based on written paper content and oral presentation. The written paper will be judged on: 1) relevance of

the topic to atmospheric flight mechanics; 2) organization and clarity; 3) appreciation of the technical issues and sources of errors; and 4) meaningful conclusions of the research. The oral presentation will be judged for overall clarity, including: 1) background and problem definition statement; 2) explanation of technical approach; and 3) explanation of research results.

GNC Graduate Student Paper Competition

The AIAA Guidance, Navigation, and Control (GNC) Technical Committee is sponsoring a Graduate Student Paper Competition. Papers have been sought from graduate students on GNC technical research topics, and six finalists will be selected by a panel of judges for inclusion in the AIAA GNC Conference. To be eligible for the competition, graduate students must be enrolled at an institution of higher education and be

in good academic standing at the time of submission of their manuscript. **The student must be the first author on the paper with their graduate advisor as the second author.** Selection will be based on a review of a full draft manuscript not exceeding a total length of 15 pages. Finalists will make two presentations at the conference: once in the Graduate Student Paper Competition session (held Sunday, **12 August 2012, 1800–2200 hrs**, in the Minnehaha Room at the Hyatt Regency Minneapolis) and again in an appropriate regular session. Finalists will receive a \$1,200 award after attending and presenting their papers. An overall best paper and presentation will be selected from the Graduate Student Paper Competition session. The winner will receive a \$2,500 prize and be recognized at the awards luncheon. Prizes are sponsored by the AIAA GNC TC.



REGISTRATION INFORMATION

Registration Type	By 16 July 2012		Conference Sessions	Welcome Reception	Awards Luncheon	Networking Luncheon	Online Proceedings
	Conference	Member Discount					
Option 1 Full Conference	\$765	\$610	•	•	•	•	•
Option 2 AIAA Undergraduate Student	\$50	\$20	•				
Option 3 AIAA Undergraduate Student with Networking	\$188	\$158	•	•	•	•	
Option 4 AIAA Graduate or PH.D. Student	\$90	\$60	•				
Option 5 AIAA Graduate or PH.D. Student with Networking	\$228	\$198	•	•	•	•	
Option 6 AIAA Retired Member	n/a	\$40	•	•	•	•	
Option 7 Group Rate*	\$549	n/a	•	•	•	•	•
Option 8 Continuing Education Courses Atmospheric Flight Dynamics and Control Flight Vehicle System Identification in Time Domain Fundamentals of Tactical and Strategic Missile Guidance Optimal State Estimation Recent Advances in Adaptive Control: Theory and Applications Six Degrees of Freedom Modeling of Missile and Aircraft Simulations	\$1,348	\$1,243	•	•	•	•	•
Extra Tickets				\$40	\$46	\$52	\$170
Baseball Game (Separate ticket purchase required)	\$40						

Pricing subject to change.
*10% discount off AIAA member rate for 10 or more persons from the same organization who register and pay at the same time

AIAA is committed to sponsoring world-class conferences on current technical issues in a safe and secure environment. As such, all delegates will be required to provide proper identification prior to receiving a conference badge and associated materials. All delegates must provide a valid photo ID (driver's license or passport) when they check in. For student registrations, a valid student ID is also required. We thank you for your cooperation.

All participants are urged to register online at www.aiaa.org/events/gnc, www.aiaa.org/events/afm, www.aiaa.org/events/mst, or www.aiaa.org/events/asc. Registering in advance saves attendees up to \$200.

Early bird registration forms must be received by **16 July 2012**, and standard registration forms will be accepted until **11 August 2012**. Preregistrants may pick up their materials at the advance registration desk at the conference. All those not registered by **11 August 2012** may do so at the on-site registration desk.

Cancellations must be received no later than **30 July 2012**. There is a \$100 cancellation fee. Registrants who cancel beyond this date or fail to attend the conference will forfeit the entire fee.

Attention AAS Members: Current AAS members in good standing are eligible to register at the same rate as AIAA members. This fee does not include AIAA membership. To become an AIAA

EXTRA TICKETS

Welcome Reception	\$40
Minnesota Twins Baseball Game <i>(separate ticket purchase required)</i>	\$40
Awards Luncheon	\$46
Networking Luncheon	\$52
Extra Online Proceedings	\$170

member or renew AIAA membership, AAS members should register at the nonmember registration rate.

For questions, please contact Sandra Turner, conference registrar, at +1 703.264.7508 or sandrat@aiaa.org.

There is a 10% discount off early bird member rate for 10 or more persons from the same organization who register and pay at the same time with a single form of payment. Includes sessions, all catered events, and single-user access to online proceedings for each registrant. A complete typed list of registrants, along with completed individual registration forms and a single payment, must be received by the preregistration deadline of **11 August 2012**.



GENERAL CONFERENCE INFORMATION



On-Site Registration Hours

On-site registration will be held in the Nicollet Promenade at the Hyatt Regency Minneapolis as follows:

Saturday, 11 August 2012	0715–0815 hrs <i>(course only)</i>
Sunday, 12 August 2012	1500–1900 hrs
Monday, 13 August 2012	0700–1700 hrs
Tuesday, 14 August 2012	0700–1700 hrs
Wednesday, 15 August 2012	0700–1700 hrs
Thursday, 16 August 2012	0700–1200 hrs

Meeting Site

Minneapolis–Saint Paul is a progressive destination with a dynamic vibe and a whirlwind of creative energy. Nearly 40,000 people live in downtown Minneapolis, ensuring that it's alive 'round the clock. Take it all in: amazing theater, world class museums, sports galore, picturesque strolls in a green, urban environment. The variety of what Minneapolis–Saint Paul has to offer is sure to delight. For more information, visit www.minneapolis.org.

Hotel Reservations

AIAA has made arrangements for a block of rooms at the:

Hyatt Regency Minneapolis
1300 Nicollet Mall
Minneapolis, Minnesota, USA 55403
Tel: +1 612.370.1234

We have negotiated special event rates of \$179 for single or double occupancy. Book your rooms early! Rooms will be held until **20 July 2012** or until the block is full. You must mention AIAA when you make your reservations to be included in this block. Visit the conference

website for a direct link to make reservations.

Government Employees: There are a small number of federal government per-diem rooms available. Visit the conference website for a direct link to make reservations.

Airport Info

The airport that serves Minneapolis is the Minneapolis–St. Paul International Airport (MSP), located approximately 14 miles from the Hyatt Regency Minneapolis.

Transportation to the hotel:

- Taxi: \$40–50 average
- Shuttle (Blue Van): \$18

Car Rental

AIAA members can save up to 15% off your car rentals with Hertz. Wherever your travel takes you, close to home or around the world, your discount CDP#66135 is the key to special savings. Be sure to include it in all of your reservations.

Cyber Café

Computers with complimentary Internet access for conference attendees will be available at the AIAA Cyber Café.

Conference Proceedings

Proceedings for these conferences will be available in online proceedings format. The cost is included in the registration fee where indicated. The online proceedings will be available on **6 August 2012**. Attendees who register in advance for the online proceedings will be provided with instructions on how to access them. Those registering on site will be

provided with instructions at that time.

“No Paper, No Podium” and “No Podium, No Paper” Policies

If a written paper is not submitted by the final manuscript deadline, authors will not be permitted to present the paper at the conference. Also, if the paper is not presented at the conference, it will be withdrawn from the conference proceedings. It is the responsibility of those authors whose papers or presentations are accepted to ensure that a representative attends the conference to present the paper. These policies are intended to improve the quality of the conference for attendees.

Membership

Nonmembers who pay the full nonmember registration fee will receive their first year's AIAA membership at no additional cost. Members who wish to renew or reinstate their membership must also pay the full nonmember registration fee.

Young Professional Guide for Gaining Management Support

Young professionals have the unique opportunity to meet and learn from some of the most important people in the business by attending conferences and participating in AIAA activities. A detailed online guide, published by the AIAA Young Professional Committee, is available to help you gain support and financial backing from your company. The guide explains the benefits of participation, offers recommendations and provides an example letter for seeking management support and funding, and shows you how to get the most out of your participation. The online guide can be found on the AIAA website at www.aiaa.org/YPGuide.

International Traffic in Arms Regulations (ITAR)

AIAA speakers and attendees are reminded that some topics discussed in the conference could be controlled by the International Traffic in Arms Regulations (ITAR). U.S. nationals (U.S. citizens and permanent residents) are responsible for ensuring that technical data they present in open sessions to non-U.S. nationals in attendance or in conference proceedings are not export restricted by the ITAR. U.S. nationals are likewise responsible for ensuring that they do not discuss ITAR export-restricted information with non-U.S. nationals in attendance.

CONTINUING EDUCATION COURSES

11-12 AUGUST 2012

Let AIAA Continuing Education courses pave the way to your continuing and future success! As the premier association representing aeronautics and astronautics professionals, AIAA has been a conduit for continuing education for more than sixty years. AIAA offers the best instructors and courses, and is committed to keeping aerospace professionals at their technical best.

Please check the conference website for up-to-date information regarding the courses.

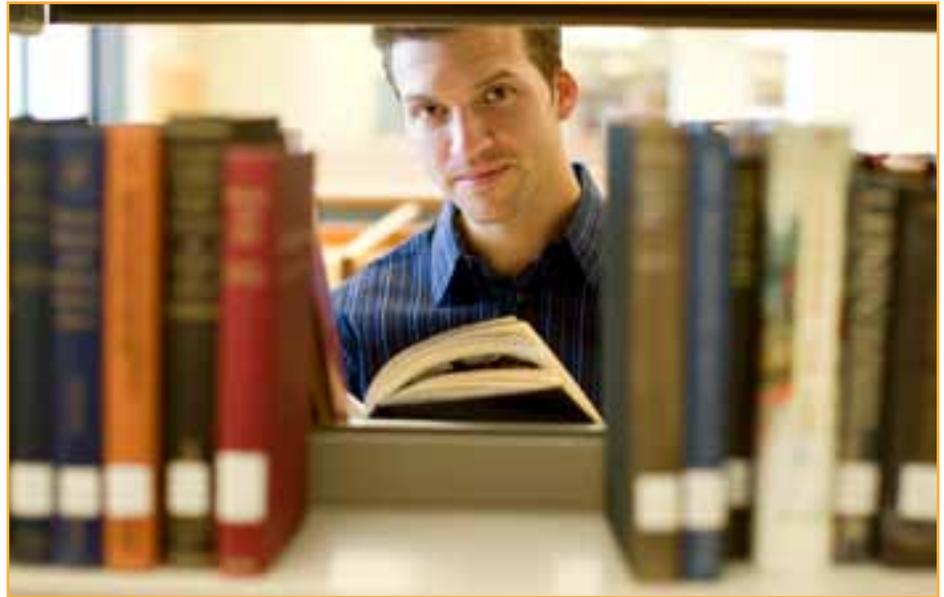
Register for any course and attend the GNC, AFM, MST, and ASC conferences for **FREE!** Registration fee includes full conference participation: admittance to technical and plenary sessions; receptions, luncheons, and online proceedings.

Atmospheric Flight Dynamics and Control

The course covers all five aspects of flight dynamics and control in an integrated format – the equations of motion; aerodynamic modeling; steady-state analysis and control power; dynamic and modal analyses including modal approximations; and synthesis of stability-augmentation and autopilot control laws. The course contains a clear, rigorous, yet practical treatment of conventional topics dealing with rigid vehicles, while also extensively addressing the flight dynamics and control of elastic vehicles.

Flight Vehicle System Identification in Time Domain

The scope of application of system identification methods has increased dramatically during the last decade. The advances in modeling and parameter estimation techniques have paved the way to address highly complex, large scale and high fidelity modeling problems. The objective of this two-day course is to review the recent advances in the time-domain methods of system identification from flight data, from both the theoretical and practical viewpoints.



Fundamentals of Tactical and Strategic Missile Guidance

Whether you work in the tactical world or the strategic world, this course will help you understand and appreciate the unique challenges of each. So that everyone can clearly understand the principles of both tactical and strategic missile guidance, concepts are derived mathematically, explained from a heuristic perspective, and illustrated with numerical examples.

Optimal State Estimation

The instructor presents state estimation theory clearly and rigorously, providing the right balance of fundamentals, advanced material, and recent research results. The features of this course include:

- A straightforward, bottom-up approach that begins with basic concepts, and then builds step-by-step to more advanced topics.
- Simple examples and problems that require paper and pencil to solve. This leads to an intuitive understanding of how theory works in practice.
- MATLAB®-based state estimation source code for realistic engineering problems. This enables students to recreate state estimation results and experiment with other simulation setups and parameters.

Recent Advances in Adaptive Control: Theory and Applications

This course will present a review of a number of well-established methods in model-reference adaptive control (MRAC). Starting with MRAC problem formulation and an overview of classical robustness and stability modifications, this course will continue to introduce the adaptive loop recovery approach that allows the approximate retention of reference model loop properties such as relative stability margins. The course will also present Kalman filtering in adaptive control, in which a Kalman Filter framework is used to update adaptation gains that enables meeting a given performance criteria without excessive tuning.

Six Degrees of Freedom Modeling of Missile and Aircraft Simulations

As modeling and simulation (M&S) is penetrating the aerospace sciences at all levels, this two-day course will introduce you to the difficult subject of modeling aerospace vehicles in six degrees of freedom (6 DoF). Starting with the modern approach of tensors, the equations of motion are derived and, after introducing coordinate systems, they are expressed in matrices for compact computer programming.



Early Bird Registration Deadline:
16 July 2012

Standard Registration Deadline:
11 August 2012



The World's Forum for Aerospace Leadership

AIAA is the world's largest technical society dedicated to the global aerospace profession. With more than 35,000 individual members worldwide, and 90 corporate members, AIAA brings together industry, academia, and government to advance engineering and science in aviation, space, and defense.

American Institute of Aeronautics and Astronautics
1801 Alexander Bell Drive, Suite 500, Reston, VA 20191-4344
703.264.7500 or 800.639.AIAA (2422) • Fax: 703.264.7657
custserv@aiaa.org • www.aiaa.org