



Mechanical and Aeronautical Engineering Department  
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<http://mae.ucdavis.edu/research/spaceEd/>

## 2008-2009 Monthly Seminar Series on Space Research

16 October, 20 November, 15 January, 19 February, 16 April, 21 May  
3<sup>rd</sup> Thursday 4:00-5:00 pm

# ADVANCED FLIGHT TECHNOLOGY CONCEPTS AT BOEING PHANTOM WORKS

**Dr. Abdollah (Abdi) Khodadoust**  
Phantom Work, The Boeing Company

Date: 20 Nov. 2008 Thursday Time: 4:10-5:00 pm (*Refreshments will be provided at 4:00 pm*) Location: 1062 Bainer

### ABSTRACT

*Hosted by: Professor Nesrin Sarigul-Klijn*

Advanced Technology Concepts at Boeing Phantom Works cover a wide spectrum, ranging from low- to high-speed flight regimes. This presentation will touch on highlights in subsonic, supersonic and hypersonic flight technology development at Boeing Phantom Works. In subsonics, design of transport vehicles with extremely efficient fuel burn and ability to operate from short runways has been center of recent attention. I will highlight areas of development relative to the Blended Wing Body program, as well as technologies that are aimed at minimization or elimination of flow separation. In supersonics, design of aircraft with minimal sonic-boom footprint has seen a resurgence. Areas of research and development at Boeing will be described which show promise in improving our understanding of sonic boom control and mitigation. In hypersonics, design of next-generation spacecraft has been a topic of focus lately, with the presidential vision for space exploration. Interest in the design of Space Shuttle replacement has inspired the assessment of several vehicle shapes, suitable for atmospheric re-entry. Examples of research, development and design at Boeing in this topic area will be described.

### ABOUT THE SPEAKER

Dr. Abdi Khodadoust is a Senior Manager at the Phantom Works division of The Boeing Company in Huntington Beach, California. He leads a team of scientists and engineers who develop next-generation technologies in Space Systems and Hypersonics. Prior to his current assignment, he was a Manager for Aerodynamics Engineering at Boeing's Integrated Defense Systems where he led a team of engineers in characterization of flight environments for various programs, including the Space Shuttle, X-37 and X-51. Abdi is also a Boeing Associate Technical Fellow in Aerodynamics. He started his career with the Advanced Transport Aircraft Division of McDonnell Douglas in 1994, where he worked on advancing the state-of-art in various aspects of transport aircraft design, including high-lift systems and aircraft icing subsystems. In 1999, Abdi joined the Boeing Space & Communications Group as lead engineer in the Space Shuttle Program where he gained invaluable experience in flight and ground operations of our Nation's Space Transportation System. Since then he has contributed to various programs such as Space Launch Initiative, Orbital Space Plane, and Crew Exploration Vehicle. He earned his BS and MS Degrees from the Ohio State University and his PhD from University of Illinois in Aeronautical and Astronautical Engineering. He is an Associate Fellow of the AIAA.

### *For more information about*

**SpaceED (Space Engineering Research and Graduate Program) or the seminars please contact Professor Nesrin Sarigul-Klijn at (530)-752-0682 or [nsarigulklijn@ucdavis.edu](mailto:nsarigulklijn@ucdavis.edu)**

Members of the campus community and visitors from the region are welcome to attend the seminar series.

Sign-in is required at the event. SpaceED seminar will replace MAE297 seminar on 3<sup>rd</sup> Thursdays.

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