

Exponent®
Engineering & Scientific Consulting

Adam Dershowitz, Ph.D., P.E., CFEI

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Professional Profile

Dr. Dershowitz specializes in aeronautical and astronautical engineering. He has expertise in aircraft and spacecraft systems and instrumentation, including unmanned systems (UAVs).

Dr. Dershowitz studies the interactions of complex systems, including human in the loop systems; airplane and helicopter icing; manned and unmanned space vehicles; cockpit displays; control of vehicles; decision making; safety critical software; software failures; software operation; IP matters; large databases and vehicle and structure fire cause and origin. He models and analyzes ground and flight vehicles, systems, and their accidents, and analyzes and presents high dimensionality and complex data.

Prior to joining Exponent, Dr. Dershowitz worked at Johnson Space Center for United Space Alliance. There, he worked in NASA's Mission Control Center on the motion control system of the International Space Station, designed and researched advanced technology solutions for Mission Control, and served as a member of the orbital debris analysis team for the Shuttle Columbia accident investigation. Dr. Dershowitz has significant teaching experience, both in the classroom and as a certified flight instructor.

Academic Credentials & Professional Honors

Ph.D., Aeronautics and Astronautics, Massachusetts Institute of Technology (MIT), 1998

M.S., Aeronautics and Astronautics, Massachusetts Institute of Technology (MIT), 1991

B.S., Aeronautics and Astronautics, Massachusetts Institute of Technology (MIT), 1989

NASA Certificate of Recognition from Inventions and Contributions Board, 2005

Nominated NASA Software of the year, 2003

NASA Spaceflight Awareness Award, 2002

Recipient Best Paper Award at AIAA Guidance, Navigation and Controls Conference, 2002

USA Superior Achievement Recognition Award for Technical Achievement, 2001

USA Employee of the month for Technical Achievement, August 2001

NASA Astronaut Selection Finalist, 2000

Nominated to be one of M.I.T. Aero/Astro XVI sixteen "whose innovation and vision for the future will help to create a future of opportunity," NASA Certificate of Recognition and cash award "For the creative

development of a technical innovation which has been proposed for publication as a NASA Technical Brief," August 1996

Distinguished Contributor, B.F. Goodrich Collegiate Inventors Program, April 1992

Hunsaker Teaching Fellowship at M.I.T., awarded 1991

Licenses and Certifications

Professional Engineer Mechanical, California, #33404

Professional Engineer, Connecticut, #PEN.0029945

Professional Engineer Mechanical, Florida, #70277

Professional Engineer Aeronautical, Massachusetts, #50794

Professional Engineer, New Jersey, #24GE05147900

Professional Engineer, New York, #93647

Professional Engineer, Pennsylvania, #PE081587

Northwestern University Center for Public Safety, Traffic Crash Reconstruction for Engineers

SAE Fundamentals of Heavy Truck Dynamics Course

3rd degree black belt in Aikido

40-Hour Hazardous Waste Operation and Emergency Response Certification (HAZWOPER)

Certified Forklift Operator (CFO)

Commercial Airplane, Glider, Instrument, aerobatic,multiengine and remote rated pilot

Certified Fire and Explosion Investigator (CFEI)

First Aid, CPR, and AED trained

NAUI Certified Open Water Diver

Academic Appointments

Adjunct Faculty, Vaughn College of Aeronautics and Technology, Fall 2017-present

Professional Affiliations

American Institute for Aeronautics and Astronautics (associate fellow)

ASTM Committee F38 on Unmanned Aircraft Systems (member)

NFPA Committee 2400 F38 on Unmanned Aircraft Systems (member)

New York Bar Association Aeronautics Committee (adjunct member)

Human Factors and Ergonomics Society—HFES (member)

Sigma Xi (member)

NAFI (member)

Patents

Patent 5,313,202: Method of and apparatus for detection of ice accretion January 1993 (with R.J. Hansman).

Patent 5,039,439: Optically indicating surface de-icing fluids, March 1989 (with R.J. Hansman).

Publications

Dershowitz A. Considerations for Aircraft Trim Control, Exponent Thought Leadership, March 27, 2019

Dershowitz A. UAVs Damage Injury and Risk. DRI Product Liability, New Orleans, LA, Feb, 2016.

Dershowitz A. UAS Safety Analysis. Report presented to the FAA, Dec 16, 2014.

Wade R, Jokar A, Cydzik K, Dershowitz A, Bronstein R. Wildland fire ash and particulate distribution in adjacent residential areas. International Journal of Wildland Fire, August 26, 2013.

Lemieux P, Moore C, Gerhardt, J, Dershowitz A. Engine Performance Measurements of Four V-Twin Engines, Using SAE J1349 Correction Factors. Small Engine Technology Conference, Sapporo, Japan, November 8-10, 2011.

Dershowitz A. ISPATOM: A generic real-time data processing tool without programming. NASA Software Tech Briefs, September 2007.

Kim J, Crassidis J, Vadali S, Dershowitz A. International Space station leak localization using attitude response data. Journal of Guidance, Control, and Dynamics 2006; September-October.

Chamitoff G, James G, Barker D, Dershowitz A. Martian resource locations: Identification and optimization. Acta Astronautica 2005; 56:756-769.

Chamitoff G, James G, Barker D, Dershowitz A. Mars mission optimization based on collocation of resources. 6th International on Mars, Pasadena, CA, July 20-25, 2003.

Dershowitz A. ISPATOM: A case study in new-generation generics for operational environments. Space Ops 2002/World Space Congress 2002, Houston, TX, October 9-12, 2002.

Chamitoff G, Dershowitz A. Bird's eye view—A 3-D situational awareness tool for the Space Station. Space Ops 2002/World Space Congress 2002, Houston, TX, October 9-12, 2002.

Kim J, Crassidis J, Vadali S, Dershowitz A. ISS leak localization using attitude response. Proceedings, AIAA Guidance, Navigation and Control Conference, Montreal, Canada; August 2001.

Chamitoff GE, Dershowitz A. Bryson AL. Command level maneuver optimization for the International Space Station. Proceedings, 23rd Annual AAS Guidance and Control Conference, Breckenridge, CO, February 2, 2000.

Dershowitz A. The effect of options on pilot decision making in the presence of risk. Ph.D. thesis, Department of Aeronauts and Astronautics and MIT, Cambridge, MA, October 1997.

Deshowitz A, Hansman RJ. An exploration of options in value based aeronautical decision making. Proceedings, 9th International Symposium on Aviation Psychology, Columbus, OH, April 30-May 1, 1997.

Dershowitz A, Lind AT, Chandra DC, Bussolari SR. The effect of compression induced distortion of graphical weather on pilot decision making. 8th International Symposium on Aviation Psychology, Columbus, OH, 1995.

Hansman RJ, Dershowitz A. Temperature measurements reveal accretion of ice on airfoils. NASA Tech Briefs, July 1995.

Lind AT, Dershowitz A, Chandra DC, Bussolari SR. A human factors approach to the development and evaluation of the graphical weather service. Proceedings, 14th Annual Digital Avionics Systems Conference, Cambridge, MA, 1995.

Simpson R, Hansman RJ, Dershowitz A, Yamaguchi K, Kazmierczak M, Wanke C. An Investigation of air transportation technology at the Massachusetts Institute of Technology, 1990-1991. Proceedings, NASA Joint University Program for Air Transportation Research, 1990-1991, NASA CP-3131, June 1991.

Dershowitz A, Hansman RJ. Experimental investigation of passive infrared ice detection of helicopter applications. Presented at the 29th Aerospace Sciences Meeting, paper AIAA-91-0667, Reno, NV, January 7-10, 1991.

Dershowitz A, Hansman RJ. Passive infrared ice detection for helicopter applications. 46th Annual Forum of the American Helicopter Society, May 1990.

Presentations

Dershowitz A, Unmanned Aerial Vehicles; History, Uses, Risks, Examples. Invited presentation at Perkins Eastman, 7/17/2019

Dershowitz A, Drone Use -Risk and Reward, CLE presentation, Pennsylvania Defense Institute, 6/13/2018

Dershowitz A, Freudenberg M, Lagonia S. Evolving Legal Issues in Commercial Use of Drones. WCBA Business & Commercial Law Committee CLE panel, Sep 29, 2016.

Dershowitz A, Boone S, Heymann S, Kaminski M, Goetz J, McCoy D. Legal Issues and Litigation Relating to the Use of Unmanned Aircraft/Drones. ABA Webinar and CLE, Jun 29, 2016.

Dershowitz A, Alkalay L, Cohen S, Oliveri J, Goglia J, Sachs P. Drone History, laws, Education and Personal and Commercial Applications, Vaughn College and AIAA Panel, May 7, 2016.

Dershowitz A, Jones M, Casey, S. Not to Drone On... A Deeper Dive and Hover into Unmanned Aerial Devices. DRI Product Liability, New Orleans, LA, Feb, 2016.

Dershowitz A, Everett S, Mormino A, Deneen, G, Spying in the Sky - Drones, the New Frontier, CPCU Society Annual Meeting, Indianapolis, IN, Oct 3-6, 2015.

Dershowitz A, Everett S, Mormino A, Deneen, G, Spying in the Sky - Drones, the New Frontier, CPCU Society Webinar, Aug 25, 2015.

Invited Commentator, "Raging Rockets" Engineering Disasters, The History Channel, May 23, 2015.

Invited Commentator, "Trapped Under Seattle" Engineering Disasters, The History Channel, May 16, 2015.

Dershowitz A. Aircraft Accident Investigation. Guest Lecturer, California State Polytechnic University, Pomona, Nov. 2011, Nov. 2012.

Dershowitz A, Weaver B. Engineering case studies of aircraft incidents, lessons learned. Chicago Bar Association Annual Meeting on Aviation Law, October 2007.

Dershowitz A. Failure analysis with case studies. Society for the Advancement of Materials and Process, ASM Failure Analysis Round Table, Cal State Northridge, April 26, 2006.

Dershowitz A, Reza A, Schroeder S. "What happened? How an engineering laboratory can help you figure it out!" 2006 Winter Meeting of the California Conference of Arson Investigators, San Luis Obispo, CA January 30-February 1, 2006.