DANIEL BORSODI ARAYA

Assistant Professor of Mechanical Engineering
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EDUCATION

Ph.D., Aeronautics (2016)
California Institute of Technology, Pasadena, CA
Advisor: John O. Dabiri
Thesis: *Aerodynamics of vertical-axis wind turbines in full-scale and laboratory-scale experiments*

M.S., Aeronautics (2012)
California Institute of Technology, Pasadena, CA

M.S., Aerospace Engineering (2011)
Texas A&M University, College Station, TX
Advisor: Sharath Girimaji
Thesis: *Resistive MHD simulations of laminar round jets with application to magnetic nozzle flows*

B.S., *summa cum laude*, Aerospace Engineering, Math and Physics minors (2008)
Texas A&M University, College Station, TX

PROFESSIONAL EXPERIENCE

Assistant Professor, University of Houston (2016-present)
Graduate Teaching Assistant, California Institute of Technology (Winter, Spring 2014)
Graduate Co-operative Education Student, NASA Johnson Space Center (2010 – 2011)
Co-operative Education Student, NASA Johnson Space Center (2005 – 2010)
Summer Student, NASA Johnson Space Center (2005)
Engineering Technician, StarVision Technologies, College Station, TX (2006)
Space Engineering Institute, College Station, TX (2004 - 2006)

AWARDS

Texas Space Grant Consortium (TSGC) New Investigator Program award (2017)
APS/DFD Gallery of Fluid Motion poster award winner (2014)
Caltech Resnick Institute Graduate Research Fellowship (2014)
Scholar keynote speaker at the U.S. Astronaut Hall of Fame Induction Gala (2013)
Caltech Division Fellowship (2011)
NSF Graduate Research Fellowship (2009)
DoD National Defense Science & Engineering Graduate (NDSEG) Fellowship (2009)
Texas A&M College of Engineering Lechner Graduate Grant (2009)
USRA Thomas R. McGetchin Memorial Scholarship (2008)
Texas A&M Academic Excellence Award Scholarship (2007, 2008)
TSGC Columbia Memorial scholarship (2007, 2008)
Texas A&M Steven A. Yates Cooperative Education scholarship (2008)
Texas A&M Benjamin R. & Deanna J. Smith Aerospace scholarship (2005, 2008).
Astronaut Scholarship Foundation national scholar (2007)
Texas A&M Stubbs/Overbeck scholarship (2007)
Outstanding co-op achievement award at NASA JSC (2006)
Texas A&M academic incentive scholarship (2004)

PUBLICATIONS

C. Parker, **D. B. Araya**, M. Leftwich (2017), "Effect of chord-to-diameter ratio on vertical-axis wind turbine wake development," *Experiments in Fluids*, 58:168.

D. B. Araya, T. Colonius, J. O. Dabiri (2017) "Transition to bluff body dynamics in the wake of vertical-axis wind turbines," *Journal of Fluid Mechanics*, 813, 346-381.

D. B. Araya, J. O. Dabiri (2015) "Vertical axis wind turbine in a falling soap film," *Physics of Fluids* 27: 091108.

M. Kinzel, **D. B. Araya**, J. O. Dabiri (2015), "Turbulence in vertical-axis wind turbine canopies," *Physics of Fluids* 27: 115012.

D. B. Araya, J. O. Dabiri (2015) "A comparison of wake measurements in motor-driven and flow-driven turbine experiments," *Experiments in Fluids,* 56 (7).

D. B. Araya, F. H. Ebersohn, S. E. Anderson, S. S. Girimaji (2015) "Magneto-Gas Kinetic Method (MGKM) for non-ideal MHD flows: Verification protocol and plasma jet simulations," *Journal of Fluids Engineering* 137: 081302.

D. B. Araya, A. Craig, M. Kinzel, J. O. Dabiri (2014), "Low-order modeling of wind farm aerodynamics using leaky Rankine bodies," *Journal of Sustainable and Renewable Energy* 6: 063118.

D. B. Araya, S. Girimaji, M. D. Carter, C. S. Olsen "Parameterization of magnetic nozzle flow physics for an in-space propulsion application," *Proceedings of the AIAA Summer Fluids Conference*, Honolulu, HI, June 2011.

D. Araya and O. Rediniotis, "Experimental Investigation of Static Pressure Measurement for the T-38 Pitot-Static Probe," *Proceedings of the AIAA region IV Student Paper Conference*, Houston, TX, April 2008.

LEADERSHIP AND VOLUNTEER ACTIVITIES

Faculty mentor for NSF Research Experience for Undergraduates (REU) summer student (2017)
Volunteer judge at the University of Houston Mars Rover Celebration (2017)
G.I. Taylor medal symposium organizer at SES annual technical meeting (2016)
Faculty mentor for UH summer undergraduate research fellowship (SURF) project (2016)
Selected participant at the NextProf 2014 Workshop (2014)
Hornung Prize committee member (2013-2014)
Invited speaker at JPL Climate Day (2014)
Mentor for Southern California Junior Academies of Science project (2013)
EMT-Basic training, San Jacinto College (2010)
Volunteer Teacher of English & Physics in Arusha, Tanzania (2009)
President of American Institute of Aeronautics and Astronautics, TAMU (2008)
Tutor for Sigma Gamma Tau National Aerospace Honor Society (2006 – 2008)
Chair of NASA Co-op Tours and Lectures Summer Committee (2008)
International delegate at the Space Generation Congress (2006)
NASA Education Outreach (2005-2008)