DEPARTMENT OF MECHANICAL ENGINEERING
WILLIAM MAXWELL REED SEMINAR SERIES

"Supersonic Parachutes for Landing Spacecraft on Mars: Current Experimental and Modeling Efforts"

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Abstract: Supersonic Disk-Gap-Band (DGB) parachutes have been used to successfully land spacecraft on Mars since 1976 with the Viking 1 and 2 landers. Extensive test programs generated full-scale Mars relevant flight data to qualify these original parachute designs. This original work has allowed subsequent Mars missions to be able to leverage the original test results and design successful supersonic DGB parachutes without having to pursue additional extensive and costly full-scale supersonic test campaigns. However, as Mars missions continue to grow in size, larger and more capable parachutes are required. Furthermore, results of the Low-Density Supersonic Decelerators (LDSD) program have called into question the feasibility of extrapolating subsonic test results to supersonic parachute deployments. This talk will outline current experimental and modeling efforts geared towards better understanding the complex physics associated with supersonic parachute deployments under Mars relevant conditions.

Bio: Jason Rabinovitch is a Mechanical Engineer at the Jet Propulsion Laboratory (JPL), California Institute of Technology, where he works in the Entry, Descent, and Landing & Formulation Group. Prior to JPL, Dr. Rabinovitch received a B.Sc. in Mechanical Engineering from Yale University in 2008, a M.Sc. in Aerospace Engineering from the California Institute of Technology in 2009, a M.Sc. in Fluid Mechanics from École Polytechnique (Paris) in 2010, and a Ph.D. in Aeronautics from Caltech in 2014. He has been fortunate to work on a variety of different projects at JPL since starting in 2014, ranging from designing, implementing, and testing a low-density low-speed open jet fan-array wind tunnel for the Mars Helicopter, to developing a hybrid rocket propulsion system for small satellites. His research interests span a wide range of topics related to experimental and computational fluid mechanics applied to EDL, vehicle design, propulsion, and geophysical applications.

Date: Friday, October 12th
Time: 3PM
Place: CB 114
Contact: Dr. Alexandre Martin 257-4462

Meet the speaker and have refreshments
Attendance open to all interested persons

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