



American Institute of Aeronautics and Astronautics

Central Florida Section

November 2012

November 2012 Announcement

What:	"Damage and Reaction Mechanisms in Solid Rocket Propellant"
Who:	Erik Matheson: Lockheed Martin Space Systems Co. (Sunnyvale, CA)
When:	Tuesday, 27 November 2012
Where:	Lockheed-Martin (Sand Lake) R&D Tower, Large Conference Room*
Itinerary:	Networking: 5:30pm-6:00pm :: Program 6:00pm (1-2 hrs)
RSVP:	By 5:00pm Wednesday, 21 November (required for security)
Membership:	You do not need to be an AIAA member to attend
Cost:	None

Note: [RSVP](#) by clicking (or ctrl-clicking) on the link.

About the Presentation:

This presentation is based on two papers co-authored by Mr. Matheson on development of the Coupled Damage and Reaction (CDAR) model for simulating the response of solid rocket propellant to postulated accident and threat scenarios. CDAR is a multiphase material model implemented in the CTH Eulerian shock physics code. The first paper describes the theoretical framework for the model along with prototype constitutive models, and the second paper describes improvements to the constitutive models with correlations to test data.

About the Speaker:



Erik Matheson received his B.S. in Nuclear Engineering Sciences in 1976 and his M.S. in Nuclear Engineering Sciences in 1978, both from the University of Florida. He has worked in thermal-hydraulic modeling of nuclear reactor loss-of-coolant accidents at Babcock & Wilcox in Lynchburg, VA, and at Nutech Engineers in San Jose, CA. Mr. Matheson worked at Westinghouse Marine Division in Sunnyvale, CA, for several years developing specialty CFD codes to compute gas dynamic loads for both the Peacekeeper and Trident missile launcher systems. After that, he joined Lockheed Martin Space Systems Company, Sunnyvale, CA, where he has worked since 1985. At Lockheed Martin, Mr. Matheson has worked on nuclear weapons effects on aerospace systems materials and structures, earth penetrator performance, solid rocket motor

interior ballistics, impact shock physics, and detonation physics. He has published fifteen papers on modeling of deformation, damage, and various detonation processes in solid rocket propellant. Mr. Matheson is currently a Technical Fellow in the Flight Sciences Engineering department at Lockheed Martin Space Systems Company in Sunnyvale, CA, and supports multiple weapon system development and sustainment programs.

* Once inside the main complex, the R&D Tower is the building closest to Sand Lake Road (the building toward the left in the hyperlinked photo).
