



# AFOSR/NASA/SNL

## Technical Interchange Meeting:

Ablator Modeling From Fundamentals to Engineering Design  
Dr. John Schmisser | 7-8 April 2009 | Santa Fe, NM

Inn and Spa at Loretto Santa Fee

Agenda Day 1

April 8, 2009

Time	Topic	Speaker
8:00 – 9:00	Registration	
9:00 – 9:40	Welcome and Overview	<b>John Schmisser</b> AFOSR <b>Michael Wright</b> NASA Ames Research Center <b>Jeff Payne</b> Sandia National Laboratories
9:40 – 10:10	SNL Perspective on MRV Issues	<b>Walter Rutledge</b> Sandia National Laboratories
10:10 - 10:30	<b>BREAK</b>	
10:30 – 11:00	Modeling Needs for Current and Future NASA Missions	<b>Robin Beck</b> NASA Ames Research Center
11:00 - 11:30	Navy Railgun Ablation Issues	<b>Artie Mabbett</b> Naval Surface Warfare Center
11:30 - 13:00	<b>LUNCH</b>	
<b>Fundamentals of Ablator Modeling</b>		
13:00 – 13:30	A Surface-Catalysis Model for Pt and SiO <sub>2</sub> Based on Accelerated Reactive Molecular Dynamics Under Hypersonic Conditions	<b>Tom Schwartzentruber</b> (Ioana Cozmuta, ELORET Corp presenting)
13:30 – 14:00	Multiscale Approach to Pyrolysis-Ablation Modeling	<b>Jean Lachaud</b> (Nagi Mansour, NASA presenting)
14:00 – 14:30	Numerical Simulation of Pyrolysis Process Associated with TPS	<b>Gary Cheng</b> University of Alabama at Birmingham
14:30 – 15:00	A Study of Ablation-Flowfield Coupling Relevant to the Orion Heatshield	<b>Christopher Johnston</b> NASA Langley Research Center
15:00 – 15:30	Physics-Based Numerical Modeling of Gas/Surface Boundaries with Catalytic and Material Response Coupling in the DPLR	<b>Matthew MacLean</b> CUBRC
15:30 – 15:45	<b>BREAK</b>	
15:45 – 16:15	The Mechanical Behavior of Ablators	<b>Greg Rodin</b> University of Texas Austin
16:15 – 17:15	Open Forum	All
	CEV Certification Issues	<b>Richard French</b> Jet Propulsion Laboratory
	Dual Layer TPS Concepts	<b>James Arnold</b> University of California, Santa Cruz/NASA Ames

	Turbulent Flow Ablation Patterns	<b>Charles Powars</b> St. Croix Research
<b>17:15</b>	<b>MEETING ADJOURNED FOR THE DAY</b>	
<b>17:15 – 19:00</b>	<b>Free Time</b>	
<b>19:00 – 21:30</b>	<b>Dinner</b>	

Agenda Day 2		
April 9, 2009		
Time	Topic	Speaker
<b>7:00 – 8:00</b>	Registration	
<b>Progress in Engineering Tool Development</b>		
<b>8:00 – 8:30</b>	Strongly Coupled Computation of Material Response and Nonequilibrium Flow for Hypersonic Ablation	<b>Alexandre Martin</b> ( <b>Iain Boyd</b> , University of Michigan presenting)
<b>8:30 – 9:00</b>	Progress on Coupling CFD and Material Response Codes	<b>Ofodike Ezekoye</b> University of Texas Austin
<b>9:00 – 9:30</b>	On-going Development of the Ablation CFD (ACFD) Code and Modeling Challenges for the Next Generation Ablation Codes	<b>Ioannis Nompelis</b> University of Minnesota
<b>9:30 – 10:00</b>	Ablation and Thermal Property Model for Phenolic Impregnated Carbon Ablator (PICA)	<b>Frank Milos</b> NASA Ames Research Center
<b>10:00 - 10:15</b>	<b>BREAK</b>	
<b>10:15 - 10:45</b>	An Approach for Modeling Coupled Ablation and Thermal Response	<b>Steve Bova</b> Sandia National Laboratories
<b>10:45 – 11:15</b>	Modeling of Nonequilibrium Surface Interactions in Support of Thermal Protection System Development	<b>Adam Beerman</b> University of Maryland
<b>11:15 – 11:45</b>	Avcoat Thermal Response Modeling Challenges (TBC)	<b>Scott Coughlin</b> NASA Johnson Spaceflight Center
<b>Open Forum – Experimental Techniquet to Inform Model Development and Validation</b>		
<b>11:45 – 12:45</b>	Open Forum	
	MEDLI/MISP – Flight Data From Mars	<b>Jose Santos</b> Sierra Lobo, Inc.
<b>12:45 – 14:00</b>	<b>LUNCH</b>	
<b>14:00 – 15:00</b>	Review and Discussion	
<b>15:00</b>	<b>MEETING ADJOURNED</b>	