

ASCE Earth and Space 2014 Conference
Technical Paper Presentation Schedule
(23 October 2014)

Time	Symposium 1: Granular Materials in Space Exploration	Symposium 2: Exploration and Utilization of Extra-Terrestrial Bodies	Symposium 3: Advanced Materials and Designs	Symposium 4: Structures in Challenging Environments
	Paper	Paper	Paper	Paper
7:00 AM	<i>continental breakfast</i>			
8:00 AM	Plenary - Gregg Maryniak - Fountains of the Moon			
9:00 AM	<u>Regolith Geotechnics 1</u> 1011 Advances in Development of Axial-Torsional Multi-Sleeve Penetrometer for Extra-Terrestrial Studies	<u>Planetary Drilling 1</u> 2011 Development and Testing of a Lunar Prospecting Drill (LPD) to Search for Water-Ice	<u>Mechanical Behavior of Advanced Materials 1</u> 3011 Analyzing the Bending Ability of ZBLAN Optical Fibers	<u>Advances in Diagnostic and Monitoring Methods 1</u> 4011* Seasonal Ground Freezing and Thawing Monitoring using Piezoceramic based Smart Aggregates
9:30 AM	1012 Penetration tests in a mold on regolith quasi-analogues at different relative densities	2012 Testing of Mars-Prototype Drills at an Analog Site	3012 Thermal Conductivity across a Bolted Joint	4012 Displacement monitoring of structures using laser image displacement method
10:00 AM	1013* Effects of Grain Properties and Compaction on Single-Tool Normal Indentation of Granular Materials	2013 Auto-gopher - A Wireline Deep Sampler Driven by Piezoelectric Percussive Actuator and EM Rotary Motor	3013 Fatigue Behavior of Boron Nitride Nanomodified Carbon Epoxy Composite	
10:30 AM	<i>break</i>			
11:00 AM	<u>Regolith Geotechnics 2</u> 1021 Evaluating Geotechnical Characterization Methods for NEOs	<u>Planetary Drilling 2</u> 2021 Novel Concept and Design of Ultralight Mobile Drilling System Dedicated for Planetary Environment	<u>Mechanical Behavior of Advanced Materials 2</u> 3021 Effective Mesomechanical Modeling of Triaxially Braided Composites for Impact Analysis with Failure	<u>Advances in Diagnostic and Monitoring Methods 2</u> 4021 Cracking Monitoring of RC Joints under Cyclic Loadings Based on Wavelet Packet Analysis on Embedded PZT Measurements
11:30 AM	1022* The Study of Power Consumption During Radial and Axial Segregation in Horizontal Rotating Cylinders	2022 Accessing, Drilling and Operating at the Lunar South Pole: Status of European Plans and Activities	3022 Thermomechanical Modeling of ZrB ₂ -SiC Ceramic Cone Under Arc-jet Conditions	4022 Damage status identification of PZT concrete frame structure based on fuzzy comprehensive evaluation
12:00 PM	<i>lunch (on your own)</i>			
12:30 PM	Keynote - Hongnan Li - Advances and Applications on Structural Vibration Control of Infrastructures			
1:30 PM	<u>Regolith Physical Properties</u> 1031 Characterizing the Physical and Thermal Properties of Planetary Regolith at Low Temperatures	<u>Planetary Surface Sampling</u> 2031 Sampling of Regolith on Moon and Mars Utilizing Electrostatic Force and Mechanical Vibration	<u>Regolith as Construction Material</u> 2041 Manufacturing of Lunar Concrete by Steam	<u>Seismic, Tidal, and Artificial Loading of Structures</u> 4031 Dynamic Response of Bridge Expansion Joints Under Vehicle Pounding
2:00 PM	1032 Contact Behavior of Lunar Materials and Their Simulants	2032 MicroDrill Sample Acquisition System for Small Class Exploration Spacecrafts	2042* Solidification of polymer concrete using the artificial lunar soil	4032 Reliability Analysis of Sluice Gate in Cao'E River Dam under Tidal Bore Loads
2:30 PM	1033 Particle Grading Effect on Bulk Mechanical Properties of Lunar Soil Simulant FJS-1	2033* Sampling of Regolith on Asteroids Utilizing Electrostatic Force	2043* Protein-Regolith Composites for Space Construction	4033* Response Modeling of Scoured Bridges Under Near-Fault Ground Motions
3:00 PM	<i>break</i>			
3:30 PM	<u>Regolith Simulants</u> 1041 Development and Application of Martian Regolith Simulant	<u>Civil Engineering in Space 1</u> 2051 Modular Additive Construction Using Native Materials	<u>Mechanical Behavior of Advanced Materials 3</u> 3031 Processing and Mechanical Characterization of Polyurea Aerogels	<u>Advanced Structures and Actuation Technology</u> 4041 Experiment investigation for a new type of piezoelectric friction damper
4:00 PM	1042 Geotechnical Properties of Korean Lunar Soil Simulant KOHLS-1	2052 A Civil Engineering Approach to Development of the Built Martian Environment	3032 Crashworthiness and Impact Simulation using Tabulated Thermo-Viscoplastic Material Model of LS-DYNA	4042 Labs-to-go Actuation Experiments and Extensions
4:30 PM	1043 Anm model approach for lunar soil simulant properties study	2053 Mass Drivers for Space Construction		4043 Scavenging energy from ambient vibrations using oscillators with asymmetrical potential wells
5:00 PM	1044 Characterization of Fillite as a potential Martian regolith simulant	2054 Dust Tolerant Commodity Transfer Interface Mechanisms for Planetary Surfaces		

MONDAY -- 27 October 2014

ASCE Earth and Space 2014 Conference
Technical Paper Presentation Schedule
(23 October 2014)

Time	Symposium 1: Granular Materials in Space Exploration Paper		Symposium 2: Exploration and Utilization of Extra-Terrestrial Bodies Paper		Symposium 3: Advanced Materials and Designs Paper		Symposium 4: Structures in Challenging Environments Paper	
7:00 AM	<i>continental breakfast</i>							
8:00 AM	Plenary - Ray Arvidson - Roving on Mars with Opportunity and Curiosity: Terramechanics and Terrain Properties							
9:00 AM	<u>Mechanism-Regolith Interactions 1</u>		<u>Novel Approaches and Architectures</u>		<u>Structures Under Extreme Conditions</u>		<u>Structures and Systems in Challenging Environments 1</u>	
9:30 AM	1051	DEM analyses of soil cutting test in lunar ground	2061	Oilfields in the Sky - A Different Race	3041	Failure Modes of Light Steel Columns with Different Cross Sections under Fire and Explosion	4051	Effects of Temperature Gradients on the Design of a Frame-Membrane Lunar Habitat
10:00 AM	1052	Laboratory Studies of Physical Interactions of Exploration Hardware with Surfaces of Airless Bodies	2062*	Expanding Mineral Resources: Technical Considerations for Extraterrestrial Mining	3042	Numerical Analysis of Honeycomb Sandwich Collision Protection Systems for RC Beams	4052	Architectural Engineering Approach to Developing a Matrix for Planning in Extreme Environments
10:30 AM	1053	Dome Pressurization and Regolith Porosity	2063	HALE: A New Approach to Utilization of Extra-Terrestrial Resources	<i>break</i>			
11:00 AM	<u>Mechanism-Regolith Interactions 2</u>		<u>Civil Engineering in Space 2</u>				<u>Structures and Systems in Challenging Environments 2</u>	
11:30 AM	1061	On Modeling Sample Acquisition from Granular Media	2071	The advantages of continuous excavation in lightweight planetary operations			4061*	Parametric Modeling of Soil-Structure Oscillators for Rapid Coastal Disaster Response
12:00 PM	1064	Leak Rate Performance of Silicone Elastomer O-Rings Contaminated with JSC-1A Lunar Regolith	2072	Additive Construction using Basalt Regolith Fines			4062	Smart Trusses for Space Applications
12:30 PM	Awards Luncheon - Don Pettit - Techno-stories from Space							
1:30 PM	<u>Regolith-Rocket Exhaust Interactions</u>		<u>Planetary Excavation</u>				<u>Advances in Diagnostic and Monitoring Methods 3</u>	
2:00 PM	1071*	Comparing Rocket Exhaust Effects across Lunar Landing Sites Using LRO Narrow Angle Camera Images	2081*	Longitudinal Impact Force on a Special Drill for Planetary Exploration			4071	Investigation and Application on Monitoring the Compactness of Concrete-Filled Steel Tube Structures with Ultrasonic Wave
2:30 PM	1072	Image Analysis Based Estimates of Regolith Erosion Due to Plume Impingement Effects	2082*	Microwave Assisted Rock Breakage for Space Mining			4072*	Damage Diagnosis Under Environmental and Operational Variation Using Improved Restoring Force Method
3:00 PM	1073	Lunar Cold Trap Contamination by Landing Vehicles	2083	Some Considerations for Excavation in Martian Aquifers			4073	Icing Monitoring for a Wind Turbine Model Blade with Active PZT Technology
3:30 PM	<u>Rover-Regolith Interactions 1</u>		<u>Space Resources Utilization</u>		<u>Hydraulic Structures</u>			
4:00 PM	1081	Roving on Mars with Opportunity and Curiosity: Terramechanics and Terrain Properties	2091	Comparative Specific Heat Capacity Analysis for Lunar In-Situ Manufacture of Thermal Energy Storage	3051	Multi Scale Information Fusion Predicating Model of Gravity Dam Deformation		
4:30 PM	1082	Curiosity's Traverse from the Kimberley to the Base of Mt. Sharp: An Orbital Data Perspective	2092	Atmospheric Processing Module for Mars Propellant Production	3052	Inverse Analysis on Thermal Parameters of Lock Head Floor Based on BP Neural Network		
5:00 PM	1083	Discrete Element Method Simulations of Mars Exploration Rover Wheel High-Slip Mobility Tests	2093	Microwave Heating Applications for In-Situ Resource Utilization and Space Mining	3053	Flow-induced vibration characteristics study on stilling basin of one giant hydropower station(n)		
	1084*	Experimental Study on Driving Wheel's Performance for Lunar Exploration Rovers	2094	Wells for In-situ Volatile Extraction From Regolith	3054	Research on Non-contact Measurement Method for Topography around Hydraulic Structure Model		

TUESDAY -- 28 October 2014

ASCE Earth and Space 2014 Conference
Technical Paper Presentation Schedule
(23 October 2014)

Time	Symposium 1: Granular Materials in Space Exploration Paper	Symposium 2: Exploration and Utilization of Extra-Terrestrial Bodies Paper	Symposium 3: Advanced Materials and Designs Paper	Symposium 4: Structures in Challenging Environments Paper
------	---	---	--	--

WEDNESDAY -- 29 October 2014	7:00 AM	<i>continental breakfast</i>			
	8:00 AM	Plenary - Chris Lewicki - Redefining Natural Resources: The Next Audacious Step			
		<u>Rover-Regolith Interactions 2</u>	<u>Asteroid Utilization</u>	<u>New Materials and Structures</u>	
	9:00 AM	1091 Prototype of Environment Analytics Driven Autonomous Vehicle	2101 Concepts of Operations for Asteroid Rendezvous Missions Focused on Resources Utilization	3081 Structural Analysis of Tensegric Structures for Space Applications	
	9:30 AM	1092 Push-Pull Locomotion for Vehicle Extraction	2102* Modeling Asteroid Deflection Induced by Subsurface Blasting	3082 Effect of Aluminum Tri-Hydrate Filler on Mechanical Properties of Glass FRP Materials	
	10:00 AM		2103* Discrete element method simulation of a boulder extraction from an asteroid	3083 Design Requirements of Fiber-Reinforced Polymer Materials for Building Applications	
10:30 AM		2104 Modeling and Simulation of Dynamics on the Surface of Phobos			