

Tuesday, March 20, 2012
POSTER SESSION I: MARS GEOMORPHOLOGY:
ANALOGS, LABORATORY STUDIES, AND SCIENCE TOOLS
6:00 p.m. Town Center Exhibit Area

Mattson S. Russell P. Byrne S. Kirk R. L. Herkenhoff K. McEwen A. S.
[*Production and Error Analysis of Polar Digital Terrain Models from HiRISE*](#) [#2659]

Digital Terrain Models of polar scarps from HiRISE are used to analyze the climate history of Mars. Techniques used to understand image noise and its effects in the DTM also have applications to analyzing the topographic data in a quantitative sense.

Walter S. Kirk R. L. Stenzel O. J. McGuire P. C. Neukum G.
[*HRSC Topographic Correction by Empirical Photometric Modeling*](#) [#2322]

We want to use the bundle adjusted orientation information of the High Resolution Stereo Camera (HRSC) together with the terrain model to derive an empirical photometric model of the image and use it for eliminating the topographic shading effects.

Poole W. Muller J-P. Gupta S.
[*On the Calibration of MOLA Pulse-Width Surface Roughness Estimates Using High-Resolution DTMs*](#) [#1854]

Surface roughness estimates from MOLA pulse-width data have been compared against surface roughness estimates from high-resolution DTMs to assess the potential of MOLA pulse-width data for landing site selection.

Pedrosa M. M. Silva E. A. Nogueira J. R.
[*Impact Crater Detection on Mars from Digital Image*](#) [#2004]

The approach we present aims to detect impact craters on Mars. To this purpose, we applied techniques of mathematical morphology, following the step of pattern recognition that uses the technique of template matching via fast Fourier transform.

Jung J. H. Kim C. J. Heo J. Luo W.
[*Estimating Volume of Martian Valleys Using Axelsson Algorithm*](#) [#2205]

A progressive TIN densification algorithm is adapted to estimate the volume martian valley networks (VN) based MOLA point data. This method can be used to estimate the global water inventory associated with VN.

Katz J. Peterson C. M. Viswanathan A. Tedder R. E. Jowell A.
[*Water Presence Detection Through Thermal Inertia Analysis in Coarse Sediment*](#) [#2019]

The thermal inertia of coarse sand was examined with varying levels of an artificial water table. Water had an impact on the thermal inertia of the samples. The higher the water table, the lower the change in temperature that was observed.

Jowell A. Jowell A. Pokuri K.
[*Thermal Modeling of Fine Gravel, Coarse Sand and Fine Sand Sediments with Varying Amounts of Saturated Layers*](#) [#2672]

This abstract discusses the thermal signatures models of different sediments with various levels of saturation.

De Hon R. A.
[*Significance of Maars on Mars: Terrestrial Analogs to Martian Monogenic Volcanism*](#) [#1075]

Monogenic volcanic fields on Earth provide insights into the significance of cinder cones, maars, and pseudocraters in interpreting martian groundwater or permafrost environment and as sampling sites for subjacent geology.

Hooper D. M. Dinwiddie C. L. McGinnis R. N. Smart K. J. Roberts M. M.
[*Observations of Debris Flows at the Great Kobuk Sand Dunes, Alaska: Implications for Analogous Features on Mars*](#) [#2040]

Debris flows with fresh-appearing gullies occur on the slopes of several dune fields on Mars. They bear a striking resemblance to small meltwater-induced debris flows observed on slopes of dunes at the Great Kobuk Sand Dunes in Alaska.

Souness C. J. Abramov A.

[*The Volcanic Terrains of Kamchatka, Eastern Russia: A Glacial and Periglacial Environment with Potential for Mars Analog-Based Research*](#) [#1071]

The high, glacierized volcanoes of eastern Russia's Kamchatka region host a broad range of glacial and periglacial landscapes which, occurring as they do in association with scoria deposits, offer opportunity for Mars analog-based research.

Reiss D. Raack J. Maturilli A. Rossi A. P. Erkeling G.

[*Dust Devil Tracks in the Turpan Depression Desert \(China\): Implications for their Formation on Mars*](#) [#2227]

We report about laboratory analyses of soil samples of investigated terrestrial dust devils tracks (DDTs). The aim of this study is to constrain the influence of compositional differences of the soil and dust properties in the formation of DDTs.