

Monday, March 19, 2012

RECENT SLOPE PROCESSES ON MARS: SLIDING, FLOWING, AND FALLING DOWN
2:30 p.m. Waterway Ballroom 6

Chairs: Joseph Levy
Norbert Schorghofer

- 2:30 p.m. Raack J. * Reiss D. Ruesch O. Hiesinger H.
[Present Day Activity of South Polar Gullies on Mars](#) [#1801]
We report on the first clearly identified seasonal changes of gullies in the south polar region on Mars. With new imaging, temperature, and spectral data we analyze the timing and mechanism that initiate gully activity in the last two martian years.
- 2:45 p.m. Palucis M. C. * Dietrich W. E. Howard A. Nishiizumi K. Kring D. A.
[How Much Water is Needed to Make Gullies on Mars: A Conceptual Model](#) [#1499]
We propose a general morphodynamic model for gully and fan systems formed by flowing water that may be applicable to some martian gullies. Our quantitative observations at Meteor Crater substantiate the conceptual model.
- 3:00 p.m. Jouannic G. * Conway S. J. Gargani J. Costard F. Patel M. R. Ori G. G.
[Experimental Investigation of Gully Formation Under Low Pressure and Low Temperature Conditions](#) [#1509]
The aim of this study is to develop a experiments both under martian atmospheric pressure and terrestrial atmospheric pressure in order to reproduce the variability of the observed martian gullies under well-constrained experimental conditions.
- 3:15 p.m. ElShafie A. * Heggy E. Dixon J. C. Chevrier V. F. Dennis N.
[Investigating the Effect of Mechanical and Electrical Regolith Properties on Geomorphological Shape Formations](#) [#2573]
We simulated gully formation under different bulk densities with the objective of correlating mechanical and electrical properties of the regolith to gully shape which enhances our knowledge, analysis and interpretation of previous, current and future surface forms.
- 3:30 p.m. Schorghofer N. * Rottas K. M. Bergonio J. R.
[A Balanced Slope Streak Population on Mars: Comparison of CTX and Viking Images](#) [#1109]
We study slope streak activity based on images separated in time by at least three decades. The number of new slope streaks nearly equals the number of disappeared slope streaks and the turnover time of the population is estimated to be four decades.
- 3:45 p.m. Kereszturi A. Sik A. Bérczi Sz. * Horvath A.
[Comparison of Recent Water or Brine Related Flow Features on Mars](#) [#1787]
Comparison of three types of recent flow-like surface features on Mars are presented, including DDS-seepages, slope streaks, and recurring slope lineae. Their characteristics are compatible with the models of brine-related wet formation mechanism.
- 4:00 p.m. Ojha L. * McEwen A. Dundas C. Mattson S. Byrne S. Schaefer E. Masse M.
[Recurring Slope Lineae on Mars: Updated Global Survey Results](#) [#2591]
Recurring Slope Lineae (RSL) are recently discovered features on Mars that are observed to form and grow during warm seasons and fade in colder seasons. We present results from our global survey for RSL in HiRISE images and their attributes.

- 4:15 p.m. Levy J. S. * Fountain A. G.
[Hydrological Characteristics of Recurrent Slope Lineae on Mars Based on Time-Resolved HiRISE Analyses and Comparisons with Fluid Flow Through an Antarctic Terrestrial Analog Regolith](#) [#1029]
We test the “wet” (brine-related) RSL formation mechanism by using repeat HiRISE images to determine whether a simple Darcy flow model can explain the spatial pattern of RSL darkening. This remote hydrogeological tool is verified in Antarctic soil.
- 4:30 p.m. Dickson J. L. * Head J. W. III
[Active-Layer Drainage Without Surface Erosion: Time-Lapse Photography of Antarctic Slope Lineae and Implications for the Flow of Water on Mars](#) [#1085]
The McMurdo Dry Valleys of Antarctica host features very similar to “recurring slope lineae” on Mars. We synchronize time-lapse photography observations and soil moisture measurements to track fluvial activity associated with these features.