Development of Robotic Technologies for the Exploration of Planetary Caves

Chair: Laura Kerber

1:30 p.m.
Narrow Vertical Caves: Mapping Volcanic Fissure Geometries [#9010]
Volcanic conduits are difficult to quantify, but their geometry fundamentally influences how eruptions occur. We robotically map old fissure conduits – elongated narrow cracks in the ground that transported magma to the surface during an eruption.

2:00 p.m.
Exploring Pits and Caves with the Axel Extreme Terrain Rover [#9022]
We present a concept for a mission to explore inside a lunar mare pit, using the enhanced mobility provided by the Axel Extreme Terrain Rover.

2:30 p.m.
Wong U. Y. * Whittaker W. L.
Robotic Exploration and Science in Pits and Caves: Results from Three Years and Counting of Analog Field Experimentation [#9031]
Robots are poised to access, investigate, and model planetary caves. We present the results of a multi-year campaign to develop robotic technologies for this domain, anchored by the most comprehensive analog field experimentation to date.

3:00 p.m.
Moonraker and Tetris: Japanese Microrovers for Lunar Cave Exploration [#9036]
A Japanese team HAKUTO is developing a robotic system for exploration of Lunar lava tubes. Motivated by Google Lunar XPRIZE that requires 500 m travel on any surface of Moon, but the team plans to go down into a skylight in Lacus Mortis.

ROBOTICS I: DISCUSSION
3:30 p.m. Lecture Hall