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Low-Cost Rovers for Exploration of Lunar Lava Tubes

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A Japanese team led by the Space Robotics Laboratory of Tohoku University is developing a low-cost rover system for exploration of Lunar lava tubes. The development project is motivated by Google Lunar XPRIZE. The prize requires 500 m travel on any surface part of Moon, but the team is interested in going down through a skylight into possible structures underneath the ground. In the presentation, mechanical design and navigation control for the rover system composed by a four-wheeled rover, Moonraker, and a two-wheeled rover Tetris are introduced with our recent field test results conducted in Japanese sand dune.