NASA Flight Opportunities Program

June Community of Practice Webinar: June 4, 2025

Regolith Roundtable: Best Practices and Insights for Working with Regolith in Flight Testing

Resources Submitted by Attendees in the Webinar Chat

- A dust adhesion paper of interest: "Adhesion of lunar simulant dust to materials under simulated lunar environment conditions" https://www.sciencedirect.com/science/article/pii/S009457652200340X
- Microgravity dust propagation modeling: "Development of a comprehensive physics-based model for study of NASA gateway lunar dust contamination"
 https://www.sciencedirect.com/science/article/pii/S0094576523002667
- Suggested reading on lunar resources: "Lunar and off Earth resource drivers, estimations and the development conundrum"
 https://www.sciencedirect.com/science/article/abs/pii/S0273117720302234

Discrete ice

Discrete ice fines

Discrete ice fines

Discontinuous ice coating (rind)

Discontinuous ice coating (rind)

Discontinuous ice coating

Ceglutinate

Ice-cemented regolith

Ice breccia

Ice-matrix breccia

Massive ice

Artwork by Lina Jakaite strike-dip.com

- "Development and characteristics of Mechanical Porous Ambient Comet Simulants as comet surface analogs"

 "Introduction of the Ambient Comet Simulants as comet surface analogs"

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 - https://www.sciencedirect.com/science/article/abs/pii/S0032063317302003
- Space Resources Roundtable: https://learn.mines.edu/srr/
- "The Manufacture and Characterization of Sintered Icy Lunar Regolith Simulants, and Implications for Space Resources and Planetary Science"
 https://www.proquest.com/openview/a0168871ad9c845265afa494d2a972a4/1?cbl=18750 &diss=y&pq-origsite=gscholar
- "Pressure Sintered icy lunar regolith Simulant (PSS): A novel icy regolith simulant production method"
 https://www.sciencedirect.com/science/article/pii/S0019103523004645
- Lunar Simulants: LSIC has done 4 different lunar simulant assessments and has worked with the simulant advisory committee. They are on multiple simulants and different types of studies (e.g. geochemical, geophysical, geotechnical, optical) You can find 3 of them here and the 4th (optical) will be posted soon.

 https://lsic.jhuapl.edu/Our-Work/Working-Groups/Lunar-Simulants.php
- Flight Opportunities webinar: New Capability Allows Payloads to Experience Lunar Gravity Aboard Suborbital Rocket https://www.nasa.gov/stmd-flight-opportunities/fo-resources/community-of-practice-webinars/may-2025/
- Subscribe to the Flight Opportunities newsletter to stay up to date on current community
 of practice topics and ways to engage with the program:
 https://www.nasa.gov/directorates/spacetech/flightopportunities/newsletter

