

From Icy Moon Interiors to the Surface of Small Bodies and the Moon—Research Focii in Münster.

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The experimental working group at the Institut für Planetologie integrates laboratory experiments with numerical simulations to advance our understanding of small bodies and moons in the Solar System. While the interior of icy moons is studied by simulations, the surface temperatures of dry, airless bodies can be modelled using a newly created **Modular Computational Simulation Interface (MoCSI)**.

To understand the physical and thermal properties of boulders on asteroids, asteroid analogue materials are created with porosities of up to 75%. A Brush-Wheel-System Sampler is developed for the proposed PRIAMOS sample return M8-mission to a D-type asteroid based on the APOSSUM concept study. Modified brushes are proposed for the M8-mission CoSI to expose subsurface material as well. Investigating, e.g., the compression behavior and angle of repose of various types of granular materials in vacuum and under reduced gravity, respectively, aim at understanding the behavior of asteroid surface materials. Finally, the study of icy granular materials under cryogenic temperatures is a major focus in Münster. A short overview will be presented.