



Laboratory simulation of dust interactions close to lunar surface

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Dust grains in space can be frequently found close to exposed surfaces, e.g., at the Moon, asteroids, comets, etc. A broad variety of solar particles–dust interactions plays its role — electrons and UV charge the grains, ions can sputter or somewhat modify the grain structure. While the grain levitating above the surface can rotate along all three axes, thus interacting nearly isotropically, the grain lying on the surface cannot move and it is exposed from one side only. We study spherical micron-sized glass grains as a representative of the silicate-type space dust. Particular interactions were experimentally observed in both an electrodynamic trap (levitating dust) and a scanning electron microscope (dust on the surface). We present a comparison of both approaches together with models of particular processes and situations; we predict and discuss dust behaviour at the lunar surface vicinity.