

Lunar Dust Simulation using SPIS

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Abstract

A new simulation of lunar dust motion is presented in this paper. A 3-dimensional software for lunar dust simulation has been developed to study both the lunar surface charging and the dust motion near a crater in the terminator region. The crater experienced differential charging due to shadowing of solar wind and solar UV flux. The edge in shadow has been found to charge to potential to ~ -100 V which creates strong electric field for lunar dust levitation. Charged dust particles are then accelerated in both horizontal and vertical directions by the electric field of the crater.