

Shock Phenomena in Dusty Plasmas of the Solar System

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The results on shock phenomena in dusty plasmas of the Solar System are reviewed. The emphasis is given to the problems of dust ion acoustic bow shock in interaction of the solar wind with dusty cometary coma and formation of transient atmospheres of atmosphereless cosmic bodies such as Moon, Mercury, asteroids and comets. The latter assumes the evolution of meteoroid impact plumes and production of charged dust grains due to the condensation of both the plume substance and the vapor thrown from the crater and the surrounding regolith layer. Active rocket experiments, which involve the release of some gaseous substance in near-Earth space, are described. These experiments model physical phenomena occurring during large meteoroid impacts. New vistas in investigation of shock processes in space dusty plasmas are determined. The author was supported by the Russian Science Support Foundation.