



## **Adhesion forces between regolith particles: Implication to problems of cratering and ponded deposits on asteroid Eros**

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Sticking forces between regolith particles on the surfaces of atmosphereless bodies control regolith strength and the phenomena depending upon the strength, e.g., crater formation. Because of low gravity on small (<50 km) asteroids, all craters on their surfaces are strength-controlled. Starting from calculated adhesion forces, we evaluated the lower limit of ejecta velocity and the fraction of the ejecta that escape the asteroid gravity, as well as crater to projectile size ratio. Adhesion forces exceed gravitational interaction between the particles by many orders of magnitude, so adhesion controls also particle detachment from the surface under the force of any nature supposed to be responsible for the formation of the ponded deposits on Eros: seismic shaking, pressure of gas flow from the interior or electrostatic repulsion. Constraints were obtained on the values of these forces required for transport of regolith particles along the surface of Eros.