Consequences of global-scale collisions

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Collisions play a fundamental role in the formation and evolution of the planets and the small body populations of the Solar System. Here we focus on collisions among 'small' (< 1000 km) bodies.

On asteroid Vesta, sometimes called a 'small planet', subsequent global scale collisions revealed a significant part of its interior. We present recent modeling of these events, which allows us to provide constraints on the internal structure of this body, which is believed to have evolved from a magma ocean.

We will also present results of a more general study of collisions among (< 1000 km) bodies where we investigate the effect of the internal structure (homogenous vs. heterogeneous or differentiated) and properties (molten vs. solid or granular) of the colliding bodies on the accretion efficiency and the disruption threshold.