

Impacts onto Cometary Nuclei

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It is expected that the Deep Impact mission will hit the Comet Tempel 1 nucleus in July 4, 2005. So, modeling of the impacts onto icy/mineral granular and porous materials, and therefore low-dense media, are very relevant. A model of result of the impact onto icy-mineral-porous target is presented on the basis of many series of impact experiments performed in the laboratories. Experimental results are extrapolated to the Deep Impact scale and farther on, to the planetary scale of collisions, e.g., to impacts of the meteorites on comet nuclei. Crucial for modeling are the parameters of the medium forming the nucleus. The most important of them are the ice to total mass ratio and the porosity. Both are virtually unknown, so they are discussed within the large ranges. Self-references. *Icarus*, 131, 210-222, 1998; *Planet. Space Sci.*, 48, 1437-1446, 2000; *Icarus*, 158, 516-531, 2002.