

ON THE "STRENGTH" OF SMALL BODIES OF THE SOLAR SYSTEM

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Comprised from rocks, ices and metals, the small bodies of the Solar System generally show features of strength, and that property played a major role in the formation and evolution of the Solar System. But the quantification of strength is generally difficult: that is a consequence of the fact that there are many different measures of strength, and those measures depend significantly on a bodies composition, previous history and size. Although it is at the root of our theories of disruption of at least all small bodies, our community has only recently begun to understand and come to grips with that issue. I will give a general review and overview of strength theories for geological-type materials, relating various different measures such as tensile, shear, and compressive strengths. I will present some recent results showing the effects of strength on the distributions of the spin states of the asteroids, which gives important clues about disruptions that we can use in our studies. And I will discuss major uncertainties about current scaling theories for the catastrophic disruptions of asteroids.