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10 rue Vauquelin, 75231 Paris Cedex 05

Séminaire PMMH

Bureau d'Études, Bâtiment L, 2 ème étage

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Solid projectile impact onto a porous dust aggregate consisting of micrometer-sized particles

Porous dust aggregates consisting cohesive monomer grains are considered materials to build planetesimals in a protoplanetary disk. In order to reveal the history of planet formation, mechanical properties of dust aggregates have to be quantitatively understood. In this study, we perform a simple impact experiment to probe dynamic mechanical properties of dust aggregates [1]. A solid sphere is dropped onto a dust aggregate. Then the crater is formed by the target compression. When the impact energy is relatively large, fragmentation can also be observed. We discuss mechanical properties of dust aggregates through the impact dynamics. In particular, strength of dust aggregates is measured by the crater formation, drag force, and fragmentation threshold. In addition, the impact dynamics is compared with the macroscopic granular impact case.

[1] H. Katsuragi and J. Blum, arXiv :1709.03118.

Prochain séminaire : vendredi 22 décembre, Jean-Pierre Hulin (FAST, Orsay)
Programme des séminaires : www.pmmh.espci.fr, onglet *Séminaires PMMH*
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