1. Record Nr. UNINA9910137374203321

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Titolo	Physics of Soft Impact and Cratering / / by Hiroaki Katsuragi
Pubbl/distr/stampa	Tokyo : , : Springer Japan : , : Imprint : Springer, , 2016
ISBN	4-431-55648-6
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (X, 307 p. 90 illus., 34 illus. in color.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 910
Disciplina	530.416
Soggetti	Amorphous substances Complex fluids Planetary science Geophysics Soft and Granular Matter, Complex Fluids and Microfluidics Planetology Geophysics and Environmental Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Scaling and dimensional analysis -- Constitutive laws -- Soft drag force -- Morphology of planetary impact craters -- Soft impact cratering -- Grains and dust dynamics -- Perspectives.
Sommario/riassunto	This book focuses on the impact dynamics and cratering of soft matter to describe its importance, difficulty, and wide applicability to planetary-related problems. A comprehensive introduction to the dimensional analysis and constitutive laws that are necessary to discuss impact mechanics and cratering is first provided. Then, particular coverage is given to the impact of granular matter, which is one of the most crucial constituents for geophysics. While granular matter shows both solid-like and fluid-like behaviors, neither solid nor fluid dynamics is sufficient to fully understand the physics of granular matter. In order to reveal its fundamental properties, extensive impact tests have been carried out recently. The author reveals the findings of these recent studies as well as what remains unsolved in terms of impact dynamics. Impact crater morphology with various soft matter impacts also is discussed intensively. Various experimental and observational results up to the recent Itokawa asteroid’s terrain and

nanocrater are reviewed and explained mainly by dimensional analysis. The author discusses perspectives of the relation between soft matter physics and planetary science, because it is an important step towards unifying physics and planetary science, in both of which fields crater morphology has been studied independently.