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Titolo	Modeling and Simulation of Tribological Problems in Technology [[electronic resource] /] / edited by Marco Paggi, David Hills
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Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (VII, 330 p. 181 illus., 57 illus. in color.)
Collana	CISM International Centre for Mechanical Sciences, Courses and Lectures, , 0254-1971 ; ; 593
Disciplina	620.1
Soggetti	Mechanics Mechanics, Applied Applied mathematics Engineering mathematics Mechanical engineering Theoretical and Applied Mechanics Applications of Mathematics Mechanical Engineering
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Fundamentals of Elastic Contacts -- Contact Problems Involving Friction -- Nonequilibrium Molecular Dynamics. Simulations of Tribological Systems -- Computational Methods for Contact Problems With Roughness -- Emergent Properties from Contact Between Rough InterFaces -- Modelling Flows in Lubrication -- Contact mechanics of rubber and soft matter.
Sommario/riassunto	This book conveys, in a self-contained manner, the fundamental concepts for classifying types of contact, the essential mathematical methods for the formulation of contact problems, and the numerical methods required for their solution. In addition to the methodologies, it covers a broad range of applications, including contact problems in mechanical engineering, microelectronics and nanomechanics. All chapters provide both substantial background on the theory and numerical methods, and in-depth treatments of cutting-edge research

topics and applications. The book is primarily intended for doctoral students of applied mathematics, mechanics, engineering and physics with a strong interest in the theoretical modelling, numerical simulation and experimental characterization of contact problems in technology. It will also benefit researchers in the above mentioned and neighbouring fields working in academia or at private research and development centres who are interested in a concise yet comprehensive overview of contact mechanics, from its fundamental mathematical background, to the computational methods and the experimental techniques currently available for the solution of contact problems.