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Descrizione fisica	1 online resource (XII, 268 p. 117 illus., 95 illus. in color.)
Collana	Springer Series in Solid and Structural Mechanics, , 2195-3511 ; ; 6
Disciplina	539.754
Soggetti	Mechanics Mechanics, Applied Theoretical and Applied Mechanics Classical Mechanics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- The Theory: Mechanics An example: Collision of a Point and a Plane -- The Theory: Mechanics and Thermics An Example: Collision of two Balls -- Collisions of Rigid Solids: Three Disks in a Plane -- Collisions of Rigid Solids: Three Balls in a Box -- Pedestrian Trajectories and Collisions in Crowd Motion -- Collisions of Deformable Solids. Collisions of Rigid Solids and Fluids -- Debris Flows and Collisions of Fluids and Deformable Solids -- Shape Memory Alloys and Collisions -- Conclusion -- Some Elements of Convex Analysis.
Sommario/riassunto	This book investigates collisions occurring in the motion of solids, in the motion of fluids but also in the motion of pedestrians in crowds. The duration of these presented collisions is short compared to the whole duration of the motion: they are assumed instantaneous. The innovative concept demonstrated in this book is that a system made of two solids, is deformable because their relative position changes. The definition of the velocities of deformation of the system introduced in the classical developments of mechanics, the principle of the virtual work and the laws of thermodynamics, allows a large range of applications such as crowd motions, debris flow motions, and shape memory alloys motions. The set of the applications is even larger: social sciences and mechanics are unified to predict the motion of

crowds with application to transport management and to evacuation of theaters management.
