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	Titolo	Coupled DEM-CFD Analyses of Landslide-Induced Debris Flows / / by Tao Zhao
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	Descrizione fisica	1 online resource (XV, 220 p. 132 illus., 82 illus. in color.)
	Disciplina	624.15
	Soggetti	Engineering geology
		Engineering—Geology
		Foundations
		Hydraulics
		Geotechnical engineering
		Fluid mechanics
		Natural disasters
		Geoengineering, Foundations, Hydraulics
		Geotechnical Engineering & Applied Earth Sciences
		Engineering Fluid Dynamics
		Natural Hazards
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	Nota di bibliografia	Includes bibliographical references.
	Nota di contenuto	Introduction -- Literature Review -- Theory and Methodology -- Calibration of Soil Strength Properties -- Investigation of Dry Granular Flows -- Validation of the DEM-CFD Coupling Method -- Investigation of Submerged Debris Flows -- Conclusions and Recommendations for Future Work.
	Sommario/riassunto	This book reflects the latest research results in computer modelling of landslide-induced debris flows. The book establishes an understanding of the initiation and propagation mechanisms of landslides by means of numerical simulations, so that mitigation strategies to reduce the long-term losses from landslide hazards can be devised. In this context, the book employs the Discrete Element Method (DEM) and Computational Fluid Dynamics (CFD) to investigate the mechanical and hydraulic

behaviour of granular materials involved in landslides – an approach that yields meaningful insights into the flow mechanisms, concerning e. g. the mobilization of sediments, the generation and dissipation of excess pore water pressures, and the evolution of effective stresses. As such, the book provides valuable information, useful methods and robust numerical tools that can be successfully applied in the field of debris flow research.