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   Nota di contenuto Preface -- Numerical atmospheric modelling -- An overview of the El
                      Niño, La Niña and the Southern Oscillation phenomena: theory,
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                      integral transform-based multilayer methods -- The earthquake's
                      mathematics -- Waves propagation and flood by tsunami -- From
                      complex systems theory to disasters risk reduction management --
                      Bayesian analysis for natural threats and hazards -- Time series
                      analysis applied to disaster risk reduction data -- Data mining
                      approaches to the real-time monitoring and early warning of convective
                      weather using lightning data -- Detection of forest burn stages using
                      remote sensing Images and stochastic distances -- Digital humanities
                      and big microdata: new approaches for demographic research --
                      Modelling and predicting social and geopolitical disasters as extreme

events: A case study considering the dynamics of international armed conflicts.

Sommario/riassunto	With relevant, timely topics, this book gathers carefully selected, peer-reviewed scientific works and offers a glimpse of the state-of-the-art in disaster prevention research, with an emphasis on challenges in Latin America. Topics include studies on surface frost, an extreme meteorological event that occasionally affects parts of Argentina, Bolivia, Peru, and southern Brazil, with serious impacts on local economies; near-ground pollution concentration, which affects many industrial, overpopulated cities within Latin America; disaster risk reduction and management, which are represented by mathematical models designed to assess the potential impact of failures in complex networks; and the intricate dynamics of international armed conflicts, which can be modeled with the help of stochastic theory. The book offers a valuable resource for professors, researchers, and students from both mathematical and environmental sciences, civil defense coordinators, policymakers, and stakeholders.