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   Nota di contenuto   The stochastic nature of disaster propagation -- Predicting Flood induced by cyclones -- How to forecast the spread of bushfires -- Propagation on a non-homogeneous media in the presence of bias -- Conclusion.

   Sommario/riassunto The expected time of impact, also known as the mean first passage time (MFPT) to reach failure, is a critical metric in the management of natural disasters. The complexity of the dynamics governing natural disasters lead to stochastic behaviour. This book shows that state transitions of many such systems translate into random walks on their respective state spaces, biased and shaped by environmental inhomogeneity. Thus the probabilistic treatment of those random walks

gives valuable insights of expected behaviour. A comprehensive case study of predicting cyclone induced flood is followed by a discussion of generic methods that predict MFPT addressing directional bias. This is followed by discussing MFPT prediction methods in systems showing network inhomogeneity. All presented methods are illustrated using real datasets of natural disasters. The book ends with a short discussion of possible future research areas introducing the problem of predicting MFPT for bush-fire propagation.