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Autore	Toriumi Mitsuhiro <1946->
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Sommario/riassunto	The recent explosion of global and regional seismicity data in the world requires new methods of investigation of microseismicity and development of their modelling to understand the nature of whole earth mechanics. In this book, the author proposes a powerful tool to reveal the characteristic features of global and regional microseismicity big data accumulated in the databases of the world. The method proposed in this monograph is based on (1) transformation of stored big data to seismicity density data archives, (2) linear transformation of microseismicity density data matrixes to correlated seismicity matrixes by means of the singular value decomposition method, (3) time series analyses of globally and regionally correlated seismicity rates, and (4) the minimal non-linear equations approximation of their correlated

seismicity rate dynamics. Minimal non-linear modelling is the manifestation for strongly correlated seismicity time series controlled by Langevin-type stochastic dynamic equations involving deterministic terms and random Gaussian noises. A deterministic term is composed minimally with correlated seismicity rate vectors of a linear term and of a term with a third exponent. Thus, the dynamics of correlated seismicity in the world contains linearly changing stable nodes and rapid transitions between them with transient states. This book contains discussions of future possibilities of stochastic extrapolations of global and regional seismicity in order to reduce earthquake disasters worldwide. The dataset files are available online and can be downloaded at springer.com.