



Entropy

an Open Access Journal by MDPI

CiteScore: 5.2

Indexed in PubMed

Impact Factor: 2.0

Special Issue Reprint

Time Series Analysis in Earthquake Complex Networks

Edited by: Tamaz Chelidze , Luciano Telesca and Filippos Vallianatos

Earthquake time series are complex due to the variety of forces affecting earthquake generation, the complexity of the Earth's crust and mantle structure, where the earthquake source develops, and the complexity of the earthquake development process in space (generation of elementary cracks, their multiplication and coalescence, leading to main fault formation and final rupture) and time (kinetics of the different stages of the fracturing process). The early stages of the process developing in the deep layers of the Earth's crust cannot be studied in detail experimentally; at present, the only mechanism through which to model these initial stages of earthquake source development is experimental and theoretical modelling. New physical/mathematical methods of data analysis, such as nonlinear dynamics, artificial intelligence/machine learning/deep learning, non-extensive statistical analysis, natural time analysis, and complex network approaches, enable us to obtain mathematical regularities underlying physical/geophysical processes using only the time series of experimental observations.

The aim of this Special Issue is to examine the progress in the analysis of complex systems' time series during the fracture process using new approaches to understanding the complexity of earthquake time series.

