



Describing Complexity of Seismicity by Networks

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The concept of earthquake network is introduced and described. Mapping the real seismic data to a growing stochastic network, discussions are developed to reveal novel aspects of complexity of seismicity. It is shown for example that the earthquake network is scale-free, small-world and hierarchically organized. Combined with other dynamical properties, the present results imply that yet unknown mechanism governing seismicity may be so-called glassy dynamics on a growing complex network. These observations have obvious importance for constructing and improving physical models of seismicity such as the ones exhibiting self-organized criticality.