

[P25] Dynamical behavior in weathers and earthquakes

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In this paper, we study the multifractal structure of the temperature and the humidity and the dynamical behavior of the seismicity phenomenon as followings; (1) Multifractal structure - In the multifractal structure of the temperature and the humidity, we estimate the generalized Hurst exponent, the Renyi exponent, and the singularity spectrum from tick data of the temperature and the humidity. In particular, we discuss the different values of the scaling exponent characterizing the multifractality. After analyzing the multifractality, we compare the multifractal property of seven cities and discuss the unusual behavior of each city. (2) Seismicity phenomenon - We study the dynamical behaviors of the seismicity phenomenon in a complex seismic time series, which presently is of interest from the viewpoint of complex systems. The dynamical mechanism for the aftershock of the 2008 Sichuan earthquake [1] is analyzed and simulated. We mainly treat the correlation and the network structure in a seismic data series. In particular, our result is compared to other findings.

References

- [1] K. Kim et al, J. Korean Phys. Soc. **56**, 1877 (2010).