

Texas Tech University. Applied Mathematics Seminar.

Application of Multi-Fractal Analysis in Time Series

Bahareh Rahmani, Texas Tech University

Wednesday, January 27, 2010

Room: MA 013, Time: 4:00pm

ABSTRACT. Many complex systems like stock markets, heart beat dynamics, human gait, DNA walk and protein sequences can be explained by multi-fractal analysis. For describing the dynamics of multi-fractal systems a single exponent like the fractal dimension is not enough and a continues spectrum of exponent are needed. Power laws have important role in multi-fractal systems and they are used locally to describe the behavior around any point. The key concept in this content is that many objects with random structure possess a scale symmetry and show a multi-scale behavior.

In this talk the fundamentals of multi-fractality are introduced and it is shown that how we can apply multi-fractal analysis to extract some features of financial time series.