

THE USAGE OF LYAPUNOV EXPONENT IN MEASURING THE STABILITY OF DYNAMIC PROCESSES

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Abstract

To study the stability of dynamic processes the exponential rate is a common indicator, and the implementation of this to difference equations leads to achieve good approximations and forecasts, but a more accurate measure of the stability is obtained using the Lyapunov exponent. In this paper we have used these indicators to study the stability of fason enterprises in a district of Albania. Here we have performed a new technique, which enables us to use the Lyapunov exponent for not very large time series data, or time series with missing data, a case encountered in most of the real data we posses. The results obtained are useful for these enterprises and interesting for us because we see how real life processes can converge or be in chaos.

Keywords: *stability, convergence, chaos, dynamic process, difference equation*