ESTIMATE OF INFORMATION MISSING IN HYDROLOGIC TIME SERIES MODELS FROM PHASE SPACE

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Abstract

This paper proposes a reconstruction analysis of rainfall time series, to be applied to the meteorological stations in the city of Bogota with the goal of optimizing the work of estimating missing data.

The methodology is based on the reconstruction of a wide dynamic statistical characterization of observables in order to facilitate the process of identifying and selecting best models to approximate the missing data problem. Among the statistical attributes include those intentional linear and nonlinear characterizations and those who study the dynamic properties of the generators of the observable systems. The latter in order to include in the analysis models in phase space which in turn is reconstructed from the observable (series) of rain in Bogota.

The second part consists of the forms of implementation of mathematical models for the completion of missing data. The presence of structure in the attractor and in the case of chaotic systems whether low or high dimensionality, will seek to develop and calibrate models in phase space, in order to exploit the dynamic behavior of the observable, in any instance be implemented statistical estimation of performance through objective functions such as mean squared error. This will be done first with missing data assumptions to study the robustness and effectiveness of the approach

Key words:: Reconstruction of Rainfall Time Series , chaotic systems

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