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Generalized Extreme Value distribution parameters as dynamical indicators of Stability

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(Submitted on 29 Jul 2011)

We introduce a new dynamical indicator of stability based on the Extreme Value statistics showing that it provides an insight on the local stability properties of dynamical systems. The indicator perform faster than other based on the iteration of the tangent map since it requires only the evolution of the original systems and, in the chaotic regions, gives further information about the information dimension of the attractor. A numerical validation of the method is presented through the analysis of the motions in a Standard map.

Subjects: Dynamical Systems (math.DS)

Cite as: arXiv:1107.5972 [math.DS] (or arXiv:1107.5972v1 [math.DS] for this version)

Submission history

From: Davide Faranda [view email] [v1] Fri, 29 Jul 2011 13:53:17 GMT (302kb,D)

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