



Recurrence and Escape Time Statistics in Electromagnetic Precursors

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Following a recent suggestion by the literature of nonlinear dynamics, we study the recurrence and escape time statistics of the binary symbolic dynamics of preseismic kHz EM emissions associated with the Athens earthquake on September 7, 1999. Twenty five stationary windows with well known values of block entropies are examined. We distinguish two qualitatively different types of behavior of the recurrence times. The behavior of the background is exponential, while the behavior of the preseismic kHz activity is algebraic. We pay attention to the fact that recent works by V. Balakrishnan and G. Nicolis relate intermittent chaos with algebraic decays and fully developed chaos with exponential decays. Further work is attempted in this direction.