

Abstract

Title: Local Predictability Exponents and universality classes in the framework of reconstructible complex systems.

We show that effective computation of Local Predictability Exponents is attainable in a microcanonical formulation without the need of grand ensembles and underlying ergodic hypothesis, by relating predictability in the signal's domain to local reconstructibility.

We show examples for various types of complex signals: heartbeat data, remote sensing, and the Speech signal. This paves the way for an accurate description of universality classes in complex systems and fascinating new perspectives in non-linear signal analysis.