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Estimation of breakdown coefficients in time series sampled from multifractal measures

A.A. Cârsteanu (1), J.J. Castro (2), C. Angulo (1)

(1) Cinvestav - Mathematics Department, Mexico, (2) Cinvestav - Physics Department, Mexico (alin@math.cinvestav.mx / +52-55-5061-3876)

Interest in breakdown coefficients stems mainly from their capacity to discriminate between different processes based on single-realization statistics, which is of special importance in such cases where other statistics (such as moment estimators) are not ergodic or do not converge at all. Processes whose integral intensities generate multifractal measures on intervals of the time axis are therefore prime examples of time series that benefit from breakdown coefficient analysis. The present work focuses on the possibility of estimating the type and the parameters of a multifractal kernel based on breakdown coefficient statistics. Limitations of proposed estimators are discussed and compared with those of estimators based on the bare values of the process.