A quasi-asymptotic behaviour of the bispectrum and the bicovariances

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Processes with long-range dependence have attracted a great deal of work in theory and applications. Applications include measurements from hydrology, soil science, signal processing, musics, network traffic etc. Although most of these measurements are non-Gaussian, the theory concerns the second order structures of the processes which is sufficient only for Gaussian case.

The object of this lecture is studying the topic of long-range dependence from the viewpoint of third-order time series analysis in frequency domain. We define the long-range dependent (LRD) time series in third-order by the bispectrum and by the bicovariances. Some examples of particular processes will be given.