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8. Analysis

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Hypergroup-based stationarity properties of stochastic processes

Let K be a hypergroup. R. Lasser and M. Leitner (J. Theoretical Probability, 1989) defined and studied K-weakly stationary processes, common estimates for the mean of a stationary process being the motivating example. J. C. Hardin and A. G. Miamee defined correlation autoregressive processes as another variant of the stationarity with applications to helicopter noise. We find sets of necessary conditions and of sufficient conditions for estimates of stationary processes with moving centres and oscillating lengths to be K-weakly stationary. We also determine when certain K-weakly stationary processes are correlation autoregressive, in particular for those related to Tchebychev polynomials and Dunkl–Ramirez' example arising from p-adic numbers.