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On periodic bilinear processes: Probabilistic structures and estimation

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This talk is devoted to the bilinear time series models with periodic coefficients (PBL). So, firstly conditions ensuring the existence of periodic stationary solution (in some sense) of the PBL and the existence of higher-order moments are given. A distribution free approach to the parameter estimation of PBL is presented. The proposed method relies with minimum distance estimator based on the first and second order empirical moments of the process. Consistency and asymptotic normality of the estimator are derived. Examples and Monte Carlo simulation results illustrate the practical relevance of our general theoretical results.