Testing equality of spectral densities using randomization techniques

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Abstract

In this paper we investigate the testing problem that the spectral density matrices of several, not necessarily independent, stationary processes are equal. Based on an L_2-type test statistic we propose a new nonparametric approach, where the critical values of the tests are calculated with the help of randomization methods. We analyze asymptotic exactness and consistency of these randomization tests and show in simulation studies that the new procedures posses very good size and power characteristics.

Keywords: multivariate time series; nonparametric tests; periodogram matrix; randomization tests; spectral density matrix.

Literatur

[1] Jentsch, C. and Pauly, M. (2011). Testing equality of spectral densities using randomization techniques. Submitted.