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Size improvement of the KPSS test using sieve bootstraps. (English) Zbl 1255.62135
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Summary: It is widely known that size distortions of the so-called KPSS stationarity test, introduced by *D. Kwiatkowski, P.C.B. Phillips, P. Schmidt* and *Y. Shin* [J. Econom. 54, No. 1-3, 159–178 (1992; Zbl 0871.62100)], become severe with persistent data. We propose the sieve bootstrap introduced by *P. Bühlmann* [Ann. Stat. 26, No. 1, 48–83 (1998; Zbl 0934.62039)] as an appropriate bootstrap for dependent processes, to obtain notable size improvement of the KPSS test. Our simulation studies demonstrate that sieve bootstrap can be effective in refining the finite-sample size performance.

MSC:

- 62G10 Nonparametric hypothesis testing
- 62G09 Nonparametric statistical resampling methods
- 65C60 Computational problems in statistics (MSC2010)

Keywords:

stationarity; size distortion

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