The V/S test of long-range dependence in random fields

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Abstract

Recently, Giraitis et al. (2003, [10]) proposed the V/S statistic for testing long memory in random sequences. We generalize this statistic to the setting of random fields. The null hypothesis is concerned with short memory random fields while the alternative contains a very large family of long memory random fields. Contrary to most of the previous works dealing with long-range dependence, no assumption is made about the isotropy of the strong dependence. Some simulations are presented in order to assess the power of the test according to the kind of long memory in presence.

Keywords: Long memory, V/S statistic, random fields.

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