Control of the truncation errors for generalized F distributions

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Abstract

F tests may not be used for all relevant hypothesis, even in rather simple models, which led to the introduction of generalized F tests, see Michalski and Zmyślony (1996, 1999).

The statistics of these tests are quotients of linear combinations of independent chi-squares, which may be non-central. Results on these distributions were obtained first for the central case, in Fonseca et al. (2002), and then for the non-central case, in Nunes and Mexia (2006). When the observations were collected under non standardized conditions the non-centrality parameters may be random. The case in which the non-centrality parameters have Gamma distributions is singled out, see Nunes et al. (2009).

The generalized F distribution are given by infinite sums. In this paper we show that there is an excellent control of the truncations errors for those sums.

Keywords

Generalized F distributions, Random non-centrality parameters, Truncation errors.

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