Avram, Florin; Leonenko, Nikolai; Šuvak, Nenad

Hypothesis testing for Fisher-Snedecor diffusion

*Journal of Statistical Planning and Inference* **142** (2012), 8, 2308-2321

**Abstract.** We consider the problem of testing the hypothesis whether the random variable $X_t$, for fixed $t$ greater than zero, on marginal distribution of ergodic diffusion with Fisher-Snedecor invariant distribution, to be called Fisher-Snedecor diffusion. We propose a GMM approach to testing this statistical hypothesis where the moment condition is based on eigenfunctions of the diffusion infinitesimal generator - Fisher-Snedecor polynomials. Statistical test is observed in two different settings: 1) for known values of parameters of the process; 2) for consistent moment based estimators of parameters. Results are illustrated in a short simulation study.