Central limit theorems for non-smooth functionals related to crossings (via the Hermite polynomial expansion).

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Abstract

Let $X = (X_t, t \geq 0)$ be a mean zero stationary process with variance one and some conditions on its function of covariance r. Central limit theorems and asymptotic variance formulas are provided for both the number of maxima in an interval and the estimator of the square root of the second spectral moment of the process. This is an application of the previous work of the authors in which Hermite polynomial representations were given for the number of crossings and for the number of maxima.

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