FUNCTIONAL LIMIT THEOREMS IN HÖLDER SPACE FOR RESIDUALS OF NEARLY NONSTATIONARY AR(1) PROCESS

Jurgita Markevičiūtė

Abstract: We investigate the polygonal line process built on the residuals of the first order nearly nonstationary autoregressive process. We prove functional limit theorems in Hölder space in two cases: the autoregressive coefficient $\phi_n$ is defined as $e^{\gamma/n}$, $\gamma < 0$ is a constant, and $\phi_n$ is defined as $1 - \gamma_n/n$, $\gamma_n \to \infty$, and $\gamma_n/n$ tends to zero as $n \to \infty$. Also we discuss some applications of these functional limit theorems in epidemic change detection.

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The full text is available here