ON THE EMPIRICAL PROCESS SAMPLED ALONG A STATIONARY PROCESS

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ABSTRACT. Let $(X_{\underline{\ell}})_{\underline{\ell}\in\mathbb{Z}^d}$ be a real random field indexed by $\mathbb{Z}^d$ with common probability distribution function F. If $(z_k)_{k=0}^{\infty}$ is a sequence in $\mathbb{Z}^d$, the empirical process obtained by sampling the random field along (z_k) is $\sum_{k=0}^{n-1}[\mathbf{1}_{X_{z_k}\leq s} - F(s)]$.

We give conditions on (z_k) implying limit theorems (Glivenko-Cantelli theorem, FCLT) for the empirical process sampled along (z_k) in different cases (independent, associated or weakly correlated random variables). We then examine these conditions when (z_k) is given by an auxiliary stationary process.

This is a joint work with Jean-Pierre Conze.

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