

1077-60-247

**Cristina Tone\*** ([cristina.tone@louisville.edu](mailto:cristina.tone@louisville.edu)), 328 Natural Sciences Building, University of Louisville, Louisville, KY 40292. *A Functional Central Limit Theorem for Empirical Processes.*

We introduce a functional central limit theorem for empirical processes endowed with real values from a strictly stationary random field satisfying an interlaced mixing condition. We proceed by using a common technique from Billingsley (1999), by first obtaining the limit theorem for the uniformly distributed case. We then generalize the result to the case where the absolutely continuous marginal distribution function is no longer uniform. In this case we show that the empirical process endowed with values from the  $\rho'$ -mixing stationary random field, due to the strong mixing condition, doesn't converge in distribution to a Brownian bridge, but to a continuous Gaussian process with mean zero and the covariance given by the limit of the covariance of the empirical process. (Received August 16, 2011)