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Addendum

A functional limit theorem for Erdös and Rényi's law of large numbers

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Professor Paul Deheuvel has kindly called my attention to the fact that Theorem 1.1 in my paper was obtained in a more general form by Borovkov [2], who proves that, given an i.i.d. sequence $\{X_n\}$ of $\mathfrak{R}^d$-valued random vectors having finite moment-generating function, 0 expectation, and a non-singular covariance matrix, then for any $c>0$, $\lim_{N\to\infty} h(\mathscr{H}_N, L_c)=0$ a.s., where $h(A,B)$ is the Hausdorff distance between sets A, $B\subset C^d[0,1] = \{x:[0,1]\to\mathfrak{R}^d \mid x \text{ is continuous and } x(0)=0\}$, endowed with the sup norm, and $\mathscr{H}_N$ and L_c are defined as in [1]; my paper deals only with the one-dimensional case. Moreover, in [4], P. Deheuvel extends this result to the case where the moment generating function of the X_n is not finite everywhere.

In addition, I should mention that the original version (1970) of the Erdös-Rényi theorem restricted the values of c; P. Deheuvel and L. Devroye [3] were first to give a full form of the Erdös-Rényi theorem, valid for each $c>0$.

References

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