

Series Editor, Shanti S. Gupta

Empirical Processes by Peter Gaenssler

This volume is mainly concerned with Glivenko-Cantelli results for empirical measures and with functional Central Limit Theorems for empirical C-processes. Specifically, the functional Central Limit Theorems assume independent, identically distributed observations in arbitrary sample spaces and are derived using a general theory of weak convergence for non-Borel measures on a metric space. This theory, initiated by R.M. Dudley and further studied by M.J. Wichura, is developed here in full and in a context that leads to a broad unification and simplification of previous methods for obtaining functional Central Limit Theorems. The approach applies to results beginning with Donsker's famous theorem for the uniform empirical process up to the most general cases known today.

The basic point of view of this volume is probabilistic, but it is hoped that the presentation, with its set-indexed context, might also lead to new approaches to inference for spatial data.

The main topics covered are as follows:

Glivenko-Cantelli convergence

The Vapnik-Chervonenkis Theory with some extensions

Weak convergence of non-Borel measures on a metric space

Portmanteau Theorem

Continuous mapping theorems

Product spaces

Sequential compactness

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The space $D[0, 1]$

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Band 65 Heft 1 1983

- 1 **M. Cranston, T.R. McConnell:** The Lifetime of Conditioned Brownian Motion
13 **Z. Zhao:** Conditional Gauge with Unbounded Potential
19 **N. Falkner:** Feynman-Kac Functionals and Positive Solutions of $\frac{1}{2}\Delta u + qu = 0$
35 **P.D. Feigin, E. Yashchin:** On a Strong Tauberian Result
49 **D. Nualart:** On the Distribution of a Double Stochastic Integral
61 **P. Hall:** Two-Sided Bounds for Nonuniform Rates of Convergence in the Central Limit Theorem
73 **G.J. Babu:** On the Law of Iterated Logarithm for Occupation Measures of Empirical Processes
83 **D.M. Mason, G.R. Shorack, J.A. Wellner:** Strong Limit Theorems for Oscillation Moduli of the Uniform Empirical Process
99 **G.A. Brosamler:** Laws of the Iterated Logarithm for Brownian Motions on Compact Manifolds
115 **M. Maejima:** A Self-Similar Process with Nowhere Bounded Sample Paths
121 **W. Ehm, D.W. Müller:** Factorizing the Information Contained in an Experiment, Conditionally on the Observed Value of a Statistic
135 **R.J. Tomkins:** Lindeberg Functions and the Law of the Iterated Logarithm
145 **J. Glover:** Discontinuous Time Changes of Semiregenerative Processes and Balayage Theorems

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