

The Annals of Probability

Vol. 16

January 1988

No. 1

Special Invited Paper

Self-intersection gauge for random walks and for Brownian motion E. B. DYNKIN

Articles

Regularized self-intersection local times of planar Brownian motion E. B. DYNKIN
Continuity and singularity of the intersection local time of stable processes
in \mathbb{R}^2 JAY ROSEN

Unique characterization of conditional distributions in nonlinear filtering
T. G. KURTZ AND D. L. OCONE

Strong bounds for weighted empirical distribution functions based on uniform
spacings JOHN H. J. EINMAHL AND MARTIEN C. A. VAN ZUIJLEN

Laws of the iterated logarithm in the tails for weighted uniform empirical
processes JOHN H. J. EINMAHL AND DAVID M. MASON

On the distributions of L_p norms of weighted uniform empirical and quantile
processes MIKLÓS CSÖRGŐ AND LAJOS HORVÁTH

Strong laws for quantiles corresponding to moving blocks of random variables
RALPH P. RUSSO

The structure of sign-invariant GB-sets and of certain Gaussian measures
MICHEL TALAGRAND

Gaussian processes and almost spherical sections of convex bodies YEHOAM GORDON

Covering problems for Brownian motion on spheres PETER MATTHEWS

On the supports of measure-valued critical branching Brownian motion I. ISCOE

A generalization of Kolmogorov's extension theorem and an application to the
construction of stochastic processes with random time domains K. Y. HU

A Malliavin-type anticipative stochastic calculus MARC A. BERGER

Weak convergence of the variations, iterated integrals and Doléans-Dade
exponentials of sequences of semimartingales FLORIN AVRAM

Probability estimates for multiparameter Brownian processes RICHARD F. BASS

A martingale approach to point processes in the plane
ELY MERZBACH AND DAVID NUALART

On the rate of convergence in the central limit theorem for martingales
with discrete and continuous time ERICH HAEUSLER

The central limit theorem and Poincaré-type inequalities LOUIS H. Y. CHEN

Normal convergence by higher semi-invariants with applications to sums
of dependent random variables and random graphs SVANTE JANSON

A central limit theorem for stationary ρ -mixing sequences with infinite variance
RICHARD C. BRADLEY

Almost sure continuity of stable moving average processes with index less
than one A. A. BALKEMA AND L. DE HAAN

A de Finetti theorem for a class of pairwise independent stationary processes
JAMES B. ROBERTSON AND STEPHEN SIMONS

Approximation of the finite prediction for a weakly stationary process AKIO ARIMOTO

Extreme sojourns of diffusion processes SIMEON M. BERMAN

Boundary crossing problems for sample means TZE LEUNG LAI

DFR property of first-passage times and its preservation under geometric
compounding J. GEORGE SHANTHIKUMAR

Moment and geometric probability inequalities arising from arrangement
increasing functions PHILIP J. BOLAND, FRANK PROSCHAN AND Y. L. TONG

Tight bounds on the exponential approximation of some aging distributions D. J. DALEY

Book Review

Review of *Ergodic Theorems* by Ulrich Krengel ROBERT SINE

Correction

Compound Poisson approximations for sums of random variables RICHARD F. SERFOZO

Differential Geometry in Statistical Inference

by S.-I. Amari, O. E. Barndorff-Nielsen, R. E. Kass, S. L. Lauritzen,
and C. R. Rao

The papers collected here present, in a concise yet comprehensive form, several major developments of recent research on differential geometry in statistics.

Contents

Introduction by R. E. Kass

Differential Geometrical Theory of Statistics–Towards New Developments

by S.-I. Amari

Introduction; Geometrical Structure of Statistical Models; Higher-Order Asymptotic Theory of Statistical Inference in Curved Exponential Family; Information, Sufficiency and Ancillarity Higher Order Theory; Fibre-Bundle Theory of Statistical Models; Estimation of Structural Parameter in the Presence of Infinitely Many Nuisance Parameters; Parametric Models of Stationary Gaussian Time Series; References

Differential and Integral Geometry in Statistical Inference by O. E. Barndorff-Nielsen

Introduction; Review and Preliminaries; Transformation Models; Transformation Submodels; Maximum Estimation and Transformation Models; Observed Geometries; Expansion of $c_{jj}^{1/2}$; Exponential Transformation Models; Appendices and References

Statistical Manifolds by S. L. Lauritzen

Introduction; Some Differential Geometric Background; The Differential Geometry of Statistical Models; Statistical Manifolds; The Univariate Gaussian Manifold; The Inverse Gaussian Manifold; The Gamma Manifold; Two Special Manifolds; Discussion and Unsolved Problems; References

Differential Metrics in Probability Spaces by C. R. Rao

Introduction; Jensen Difference and Entropy Differential Metric; The Quadratic Entropy; Metrics Based on Divergence Measures; Other Divergence Measures; Geodesic Distances; References

List price \$25

IMS member price \$15

Order prepaid from:

**Institute of Mathematical Statistics
3401 Investment Boulevard, Suite 7
Hayward, California 94545 (USA)**