

PROBABILITY AND RELATED TOPICS IN PHYSICAL SCIENCES

By **MARK KAC**

Department of Mathematics, Cornell University

WITH SPECIAL LECTURES BY

G. E. Uhlenbeck

Department of Physics, University of Michigan

A. R. Hibbs

Jet Propulsion Laboratory, California Institute of Technology

Balth. van der Pol

Emeritus Director, International Telecommunication Union

AMERICAN MATHEMATICAL SOCIETY

Providence, Rhode Island 02940

Contents

I. Nature of Probabilistic Reasoning	1
II. Some Tools and Techniques of Probability Theory . . .	25
III. Probability in Some Problems of Classical Statistical Mechanics	59
IV. Integration in Function Spaces and Some Applications .	161
Appendix I. The Boltzmann Equation, by G. E. Uhlenbeck	183
Appendix II. Quantum Mechanics, by A. R. Hibbs.	205
Appendix III. Smoothing and "Unsmoothing", by BALD. VAN DER POL.	223
Appendix IV. The Finite Difference Analogy of the Periodic Wave Equation and the Potential Equation, by BALD. VAN DER POL.	237
Bibliography	259
Index	265