

# Lecture Notes in Mathematics

Edited by A. Dold and B. Eckmann

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## Stochastic Analysis and Applications

Proceedings of the International Conference  
held in Swansea, April 11–15, 1983

Edited by A. Truman and D. Williams

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Springer-Verlag  
Berlin Heidelberg New York Tokyo 1984

**Editors**

Aubrey Truman

David Williams

Department of Mathematics and Computer Science

University College of Swansea

Singleton Park, Swansea SA2 8PP, Wales

AMS Subject Classification (1980): 60H05, 60H10

ISBN 3-540-13891-9 Springer-Verlag Berlin Heidelberg New York Tokyo

ISBN 0-387-13891-9 Springer-Verlag New York Heidelberg Berlin Tokyo

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Printed in Germany

Printing and binding: Beltz Offsetdruck, Hemsbach / Bergstr.

2146 / 3140-543210

## PREFACE

This volume contains a number of papers presented at the Workshop on Stochastic Analysis and its Applications, held in Swansea from 11 April to 15 April 1983, together with some more recent research papers by the Swansea school. The applications include such diverse topics as stochastic mechanics and the Titius-Bode law, non-standard Dirichlet forms and polymers, statistical mechanics, quantum stochastic processes, the applications of local-time to proving path-wise uniqueness of solutions of stochastic differential equations and its application to excursion theory, Bessel processes and pole-seeking Brownian motion, queues, potential theory and Wiener-Hopf theory. Some new results for Brownian motion on how one process determines another are also given. The applications to Mathematical Physics appear first, followed by the papers on local-time, Bessel processes and queues. The papers of the Swansea school are collected together at the end of the volume. We are grateful to SERC for financial support through research grant GR/C52162 and we are especially indebted to James Taylor for invaluable help and advice during the conference. Finally we should like to record our thanks to Mrs E. Williams, Mrs M. Prowse and Mrs M. Brook for making such an excellent job of typing the Swansea contributions.

A. Truman  
D. Williams  
Swansea  
April, 1983

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