FUNCTIONAL INTEGRATION

Theory and Applications

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"Dick was also a profoundly original scientist. He refused to take anybody's word for anything. This meant that he was forced to rediscover or reinvent for himself almost the whole of physics. It took him five years of concentrated work to reinvent quantum mechanics. He said that he couldn't understand the official version of quantum mechanics that was taught in textbooks, and so he had to begin afresh from the beginning. This was a heroic enterprise. He worked harder during those years than anybody else I ever knew. At the end he had a version of quantum mechanics that he could understand."

Quotation from F. Dyson,
"Disturbing the Universe",
Harper & Row, New York, 1979.
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PREFACE

The idea of the workshop on Functional Integration, Theory and Applications, held in Louvain-la-Neuve from November 6 to 9 1979, was to put in close and informal contact, during a few days, active workers in the field.

There is no doubt now that functional integration is a tool that is being applied in all branches of modern physics. Since the earlier works of Dirac and Feynman enormous progress has been made, but unfortunately we lack still a unifying and rigorous mathematical framework to account for all the situations in which one is interested. We are then in presence of a rapidly changing field in which new achievements, proposals, and points of view are the normal pattern.

Considering this state of affairs we have decided to order the articles starting from the more fundamental and ambitious from the point of view of mathematical rigour, followed by articles in which the main interest is the application to concrete physical situations. It is obvious that this ordering should not be taken too seriously since in many cases there will be an interplay of both objects.

We would like to express our gratitude to all the people that have helped in the preparation of the Conference and in the practical realization of these Proceedings. We are especially indebted to J. DONEUX, O. JANSSENS DE BISTHOVEN and M. VAUSE (U.C.Louvain), F. LANGOUCHE and D. ROEKAERTS (K.U.Leuven) for their valuable help. We are also most grateful to Ms. C. DETROIJE and Ms.L. DUBOIS for their assistance in the organization of the meeting and for their kind cooperation in the material realization of this book. Finally we want to express our genuine thanks to Dr. Ken DERHAM and the Plenum Publishing Company Ltd. for their efficient collaboration.

J.P. Antoine
E. Tirapegui

CONTENTS

Anticommutative Integration	1
P. Krée	
Stationary Phase for the Feynman Integral and Trace Formula	23
S. Albeverio, Ph. Blanchard and R. Høegh-Krohn	
White Noise Analysis and the Feynman Integral.....	43
L. Streit	
Feynman Formula and Poisson Processes for Gentle Perturbations	53
Ph. Combe, R. Høegh-Krohn, R. Rodriguez, M. Sirugue and M. Sirugue-Collin	
The Classical Limit of Quantum Mechanics in a Curved Space Background	65
D. Elworthy and A. Truman	
Integration in Hilbert Space and Quantum Theory	89
A. Bach	
Path Integrals for Affine Variables	101
J.R. Klauder	
Path Integrals over Coherent States	121
E. Onofri	
Path Integrals, Coherent States, and Geometric Quantization	125
H.P. Berg and J. Tarski	
Translational Invariance in Feynman-Type Integrals	143
J. Tarski	
Canonical Versus Functional Methods in Quantum Mechanics and Field Theory	151
A.C. Hirshfeld, H. Leschke and T. Suzuki	

A Stochastic Description of Tunneling in Quantum Mechanics	163
E. Etim	
Dependence of the Feynman Path Integral on Discretization: The Case of a Spinless Particle in an External Electromagnetic Field	175
W. Garczynski	
Semiclassical Expansions on Riemannian Manifolds	191
F. Langouche, D. Roekaerts and E. Tirapegui	
Quantization in Curved Spaces: Functional Integration and the Quantum Action Principle on Riemannian Geometries	207
H. Dekker	
Intrinsic Path Integral Solution to the Fokker-Planck Equation	225
L. Garrido and J. Llosa	
Path Integrals, Composite Operators and Mode Coupling.....	249
H. Horner	
Onsager-Machlup Function of Nonlinear Non-Equilibrium Thermodynamics	263
R. Graham	
The Onsager-Machlup Lagrangian and the Optimal Control for Diffusion Processes	281
K. Yasue	
Feynman's Approach to the Polaron Problem Generalized to Arbitrary Quadratic Actions	291
J. Adamowski, B. Gerlach and H. Leschke	
Nonlinear D.C.-Conductivity in Polar Semiconductors	303
F. Peeters and J.T. Devreese	
The Uses of Instantons for Diffusion in Bistable Potentials	311
U. Weiss and W. Häffner	
Metastable Phases and Perturbation Expansions.....	333
M. Calvo	
Participants	351
Index	353