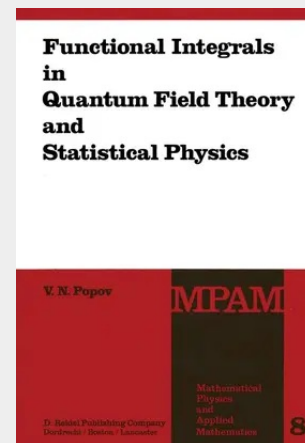


Functional Integrals in Quantum Field Theory and Statistical Physics

Functional integration is one of the most powerful methods of contemporary theoretical physics, enabling us to simplify, accelerate, and make clearer the process of the theoretician's analytical work. Interest in this method and the endeavour to master it creatively grows incessantly. This book presents a study of the application of functional integration methods to a wide range of contemporary theoretical physics problems. The concept of a functional integral is introduced as a method of quantizing finite-dimensional mechanical systems, as an alternative to ordinary quantum mechanics. The problems of systems quantization with constraints and the manifolds quantization are presented here for the first time in a monograph. The application of the functional integration methods to systems with an infinite number of degrees of freedom allows one to uniquely introduce and formulate the diagram perturbation theory in quantum field theory and statistical physics. This approach is significantly simpler than the widely accepted method using an operator approach.

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