Instructions for Authors	Communications in Mathematical Physics

The instructions should be read carefully before preparing the manuscript

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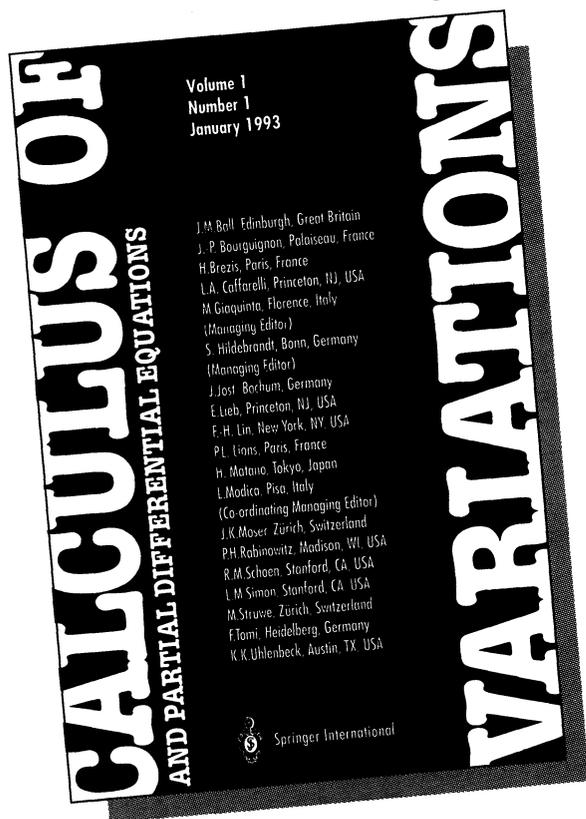

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Calculus of Variations

and Partial Differential Equations

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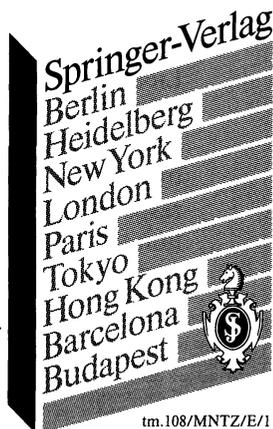
Statistical Physics

I M. Toda, R. Kubo, N. Saito

Equilibrium Statistical Mechanics

The fundamentals of equilibrium statistical mechanics are discussed in this text, which focuses on basic physical aspects. No previous knowledge of thermodynamics or the molecular theory of gases is assumed. Illustrative examples based on simple materials and photon systems elucidate the central ideas and methods.
This book not only offers an elementary introduction to statistical physics but also sets the stage for likely future developments. A fluent exposition of the general principles is given in the first half, while the second deals with two of the most fascinating subjects in this area: phase transitions and ergodic problems.

II R. Kubo, M. Toda, N. Hashitsume

Nonequilibrium Statistical Mechanics

This text, the second volume of a two-volume set, treats statistical theories of nonequilibrium states from the viewpoint of the fluctuation-dissipation theorem, mainly in the framework of linear response theory. It begins by introducing the fundamental concepts and methods of stochastic theories. The classical theory of Brownian motion is generalized into a standard theory for fluctuation, relaxation, and response. The problem of coarse graining is treated on the basis of the stochastic Liouville equation and the damping theory formalism uses the projection operator method. One chapter is devoted to phenomenological treatments of relaxation and another to linear response theory. The final chapter is an introduction to the fieldtheoretic Green's function method.

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