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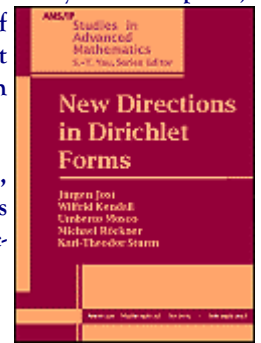
Authors: Jürgen Jost, Wilfrid Kendall, Umberto Mosco, Michael Röckner and Karl-Theodor Sturm
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New Directions in Dirichlet Forms

Description

The theory of Dirichlet forms brings together methods and insights from the calculus of variations, stochastic analysis, partial differential and difference equations, potential theory, Riemannian geometry and more. This book features contributions by leading experts and provides up-to-date, authoritative accounts on exciting developments in the field and on new research perspectives. Topics covered include the following: stochastic analysis on configuration spaces, specifically a mathematically rigorous approach to the stochastic dynamics of Gibbs measures and infinite interacting particle systems; subelliptic PDE, homogenization, and fractals; geometric aspects of Dirichlet forms on metric spaces and function theory on such spaces; generalized harmonic maps as nonlinear analogues of Dirichlet forms, with an emphasis on non-locally compact situations; and a stochastic approach based on Brownian motion to harmonic maps and their regularity.

Various new connections between the topics are featured, and it is demonstrated that the theory of Dirichlet forms provides the proper framework for exploring these connections.



Nonlinear Evolutionary Partial Differential Equations

Editors: Xia Xi Ding and Tai-Ping Liu
 ISBN:0-8218-0661-0
 Year Published: 1997
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Description

This volume contains the proceedings from the International Conference on Nonlinear Evolutionary Partial Differential Equations held in Beijing in June 1993. The topic for the conference was selected because of its importance in the natural sciences and for its mathematical significance. Discussion topics include conservation laws, dispersion waves, Einstein's theory of gravitation, reaction-diffusion equations, the Navier-Stokes equations, and more. New results were presented and are featured in this volume.

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- Plenary Lectures
- Parallel Invited Talks
- Stability of boundary integral methods for water waves
- On the compactly supported solutions of KPP or Fischer type equations
- Delta waves in solutions of conservation laws
- Solution to M-D Riemann problems for quasilinear hyperbolic system of proportional conservation laws
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- Survey of vacuum theory and conjecture
- The initial value problem of a system of conservation laws
- Entropy solutions for a hydrodynamic model for semiconductors
- A survey on stability of viscous shock profiles without genuine nonlinearity

