

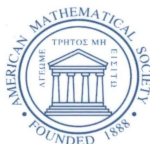
CONTEMPORARY MATHEMATICS

209

Optimization Methods in Partial Differential Equations

Proceedings from the
1996 Joint Summer Research Conference
June 16–20, 1996
Mount Holyoke College

Steven Cox
Irena Lasiecka
Editors



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This volume contains selected papers presented at the AMS-SIAM 1996 Joint Summer Research Conference held at Mount Holyoke College in South Hadley, Massachusetts, on June 16–20, 1996.

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Preface

This book contains selected papers presented at the AMS-SIAM 1996 Joint Summer Research Conference held at Mount Holyoke College in South Hadley, Massachusetts, between the 16th and 20th of June 1996. These papers, written by specialists in their respective fields, are devoted to the study of optimization problems in the context of partial differential equations (PDE's). The problems considered range from basic theoretical issues in the calculus of variations (e.g., infinite dimensional Hamilton Jacobi equations, saddle point principles, and issues of unique continuation) to problems which focus on application and computation, where the theoretical tools are tuned to more specifically defined problems. The latter embraced inverse/recovery problems in physical systems, shape optimization and shape design of elastic structures, control and optimization of fluids, boundary controllability of PDE's, including applications to flexible structures, etc.

The papers were selected according to tripartite criteria: they are at the forefront of their respective domains, they indicate modern trends, and they expose open problems.

The conference was funded by a grant from the National Science Foundation, whose support is gratefully acknowledged.

The organizers are grateful to all participants for their contributions to the conference, either by lecturing and publishing in the proceedings, or by actively taking part and debating a wide range of ideas during the conference.

Very warm thanks are extended to the AMS staff and, in particular, to Mr Wayne Drady and Ms Romy Cascella, whose help and smooth coordination of various activities contributed to the success of the conference.

Finally, we wish to thank Ms Chris Thivierge from the AMS Publications Office, for helping us prepare these manuscripts for publication.

Steven Cox and Irena Lasiecka

Optimization Methods in Partial Differential Equations

Steven Cox and Irena Lasiecka, Editors

This book presents a collection of papers written by specialists in the field and devoted to the analysis of various aspects of optimization problems with a common focus on partial differential equation (PDE) models. These papers were presented at the AMS-SIAM 1996 Joint Summer Research Conference held at Mount Holyoke College, South Hadley, MA, in June 1996.

The problems considered range from basic theoretical issues in the calculus of variations—such as infinite dimensional Hamilton Jacobi equations, saddle point principles, and issues of unique continuation—to ones focusing on application and computation, where theoretical tools are tuned to more specifically defined problems. The last category of these problems include inverse/recovery problems in physical systems, shape optimization and shape design of elastic structures, control and optimization of fluids, boundary controllability of PDE's including applications to flexible structures, etc.

The papers selected for this volume are at the forefront of research and point to modern trends and open problems. This book will be a valuable tool not only to specialists in the field interested in technical details, but also to scientists entering the field who are searching for promising directions for research.

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