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Maximum Principles and Sharp Constants for Solutions of Elliptic and Parabolic Systems

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The main goal of this book is to present results pertaining to various versions of the maximum principle for elliptic and parabolic systems of arbitrary order. In particular, the authors present necessary and sufficient conditions for validity of the classical maximum modulus principles for systems of second order and obtain sharp constants in inequalities of Miranda-Agmon type and in many other inequalities of a similar nature. Somewhat related to this topic are explicit formulas for the norms and the essential norms of boundary integral operators. The proofs are based on a unified approach using, on one hand, representations of the norms of matrix-valued integral operators whose target spaces are linear and finite dimensional, and, on the other hand, on solving certain finite dimensional optimization problems.



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This book reflects results obtained by the authors, and can be useful to research mathematicians and graduate students interested in partial differential equations.

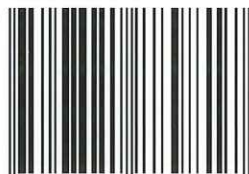


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