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The Sharpest Cut is written in honor of Manfred Padberg, who has made fundamental contributions to both the theoretical and computational sides of integer programming and combinatorial optimization. This outstanding collection presents recent results in these areas that are closely connected to Padberg's research. His deep commitment to the geometrical approach to combinatorial optimization can be felt throughout this volume; his search for increasingly better and computationally efficient cutting planes gave rise to its title.

The peer-reviewed papers contained here are based on invited lectures given at a workshop held in October 2001 to celebrate Padberg's 60th birthday. Grouped by topic (packing, stable sets, and perfect graphs; polyhedral combinatorics; general polytopes; semidefinite programming; computation), many of the papers set out to solve challenges set forth in Padberg?s work. The book also shows how Padberg's ideas on cutting planes have influenced modern commercial optimization software. In addition, the volume contains a short curriculum vitae, a personal account of Padberg?s work by Laurence Wolsey, and an appendix with reflections from Egon Balas, Claude Berge, and Harold Kuhn.

Audience

This book serves as an excellent resource for researchers and graduate students in integer programming and combinatorial optimization.

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