



Special Issue: International Symposium on Mathematical Programming 2022

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This volume of MPB (Mathematical Programming, Series B) is dedicated to articles from the invited speakers of the 24th International Symposium on Mathematical Programming (ISMP). ISMP is the flagship conference of the Mathematical Optimization Society and has been held every three years since 1964. The Symposia have provided a comprehensive forum for presentation of research results in the mathematics of mathematical programming, in algorithms and computation, and in modeling. The latest conference was originally planned to be held in 2021 in Beijing but due to the pandemic it was first postponed for a year and then it was held online in 2022 with a small number of invited talks. The talks were scheduled and streamed one at a time at different times of the day in an effort to reach the worldwide MOS community. Each

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talk was followed by a Q&A session to facilitate participation. While not having an in-person meeting has been disappointing for the community, the virtual conference helped us get a breath of fresh air during trying times.

The areas covered in the talks ranged from integer, nonlinear and stochastic optimization to various applications in machine learning, data-driven decision-making, and economics.

The invited speakers and the titles of their talks for the 24th ISMP were as follows:

- Tseng Memorial Lecture
 - Yin Zhang, Chinese University of Hong Kong, *Seeking Consensus on Subspace in Distributed PCA Calculations*
- Plenary speakers
 - Yuhong Dai, Chinese Academy of Sciences, China, *Optimization with Least Constraint Violation*
 - Dick den Hertog, University of Amsterdam, *Robust nonlinear optimization*
 - Rekha Thomas, University of Washington, *Graphical Designs*
 - Yinyu Ye, Stanford University, *Online Linear Programming: Applications and Extensions*
- Semi-plenary speakers
 - Amitabh Basu, Johns Hopkins University, *Complexity of optimizing over integers*
 - Sébastien Bubeck, Microsoft Research, *Set Chasing, with an application to online shortest path*
 - Coralia Cartis, Oxford University, *Dimensionality reduction techniques for non-convex optimization problems*
 - Alexandre d’Aspremont, CNRS, Paris, École Normale Supérieure, *Approximation Bounds for Sparse Programs*
 - Stefanie Jegelka, Massachusetts Institute of Technology, *Deep Learning for Combinatorial Optimization, from a Machine Learning Perspective*
 - Simge Küçükyavuz, Northwestern University, *New Perspectives on Mixed-Integer Convex Optimization with Applications in Statistical Learning*
 - Georgia Perakis, Massachusetts Institute of Technology, *The Role of Optimization in Some Recent Advances in Data-Driven Decision-Making*
 - Chung Piaw Teo, National University of Singapore, *Market Share Analytics—Theory and Applications*
 - Juan Pablo Vielma, Google Research, *Modeling and Duality in Domain Specific Languages for Mathematical Optimization*

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