



Mathematical Programming

The State of the Art

Bonn 1982

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Preface

In the late forties, Mathematical Programming became a scientific discipline in its own right. Since then it has experienced a tremendous growth. Beginning with economic and military applications, it is now among the most important fields of applied mathematics with extensive use in engineering, natural sciences, economics, and biological sciences. The lively activity in this area is demonstrated by the fact that as early as 1949 the first "Symposium on Mathematical Programming" took place in Chicago.

Since then mathematical programmers from all over the world have gathered at the international symposia of the Mathematical Programming Society roughly every three years to present their recent research, to exchange ideas with their colleagues and to learn about the latest developments in their own and related fields. In 1982, the XI. International Symposium on Mathematical Programming was held at the University of Bonn, W. Germany, from August 23 to 27. It was organized by the Institut für Ökonometrie und Operations Research of the University of Bonn in collaboration with the Sonderforschungsbereich 21 of the Deutsche Forschungsgemeinschaft.

This volume constitutes part of the outgrowth of this symposium and documents its scientific activities.

Part I of the book contains information about the symposium, welcoming addresses, lists of committees and sponsors and a brief review about the Fulkerson Prize and the Dantzig Prize which were awarded during the opening ceremony.

The scientific program consisted of state-of-the-art tutorials, invited and contributed talks. The state-of-the-art tutorials constituted the main frame of the symposium. 23 leading experts gave one-hour lectures which were a combined didactic introduction and survey of the most interesting and recent results in rapidly developing areas of mathematical programming. Emphasis was placed on latest research results not covered in monographs and textbooks in order to acquaint scientists with new ideas and an effort was made to bridge the gap between different fields of mathematical programming.

Twentyone of these state-of-the-art tutorials have materialized into comprehensive survey papers which form the core of this volume. They can be found in Part II of the book. These papers document the state of the art of our field in the year 1982.

In addition to these tutorials 500 invited and contributed talks of 25 minutes length each were given. These lectures were grouped into four groups of sessions a day. There were up to twelve sessions in parallel, each session con-

sisting of three talks. A complete listing of all sessions and talks given during the symposium can be found in Part III as well as a list of authors of papers presented in Bonn. There will be no proceedings volume of the invited and contributed papers. Many of these will appear in the scientific literature in the near future.

Finally we would like to thank all those people and organizations without whose enthusiastic and unselfish support this symposium would not have been possible. In particular, we would like to thank Mrs. H. Higgins who was the mainstay of the organisation. We are furthermore very much indebted to the sponsors of this meeting. Special acknowledgments are contained in Part I of this volume. Last but not least our thanks go to Springer Verlag for their excellent cooperation in publishing this volume.

Bonn, May 1983

Achim Bachem
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