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Kurt Marti (Ed.)

Stochastic Optimization

Numerical Methods and Technical Applications

Proceedings of a GAMM/IFIP-Workshop held at
the Federal Armed Forces University Munich,
Neubiberg, FRG, May 29–31, 1990

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PREFACE

This volume includes a selection of papers presented at the GAMM/IFIP-Workshop on "Stochastic Optimization: Numerical Methods and Technical Applications", held at the Federal Armed Forces University Munich, May 29-31, 1990.

The objective of this meeting was to bring together scientists from Stochastic Programming and from those Engineering areas, where Mathematical Programming models are common tools, as e.g. Optimal Structural Design, Power Dispatch, Acid Rain Abatement etc.. Hence, the aim was to discuss the effects of taking into account the inherent randomness of some data of these problems, i.e. considering Stochastic Programming instead of Mathematical Programming models in order to get solutions being more reliable, but not more expensive.

An international programme committee was formed which included

H.A. Eschenauer (Germany)
P. Kall (Switzerland)
K. Marti (Germany, Chairman)
J. Mayer (Hungary)
G.I. Schuëller (Austria)

Although the number of participants had to be small for technical reasons, the area covered by the lectures during the workshop was rather broad. It contains theoretical insight into stochastic programming problems, new computational approaches, analyses of known solution methods, and applications in such very different technical fields as ecology, energy demands, and optimal reliability of mechanical structures. In particular, the applied presentation also pointed to several open methodological problems.

In order to guarantee a high scientific level of the present Proceedings, all papers were refereed. Hence, we express our gratitude to all referees and to all contributors for delivering the final version of their papers in due time.

We gratefully acknowledge the financial support of GAMM (Gesellschaft für Angewandte Mathematik und Mechanik, IFIP (International Federation For Information Processing) and Federal Armed Forces University Munich.

Finally, we thank Springer-Verlag for including the Proceedings in the Springer Lectures Notes Series.

Munich

June 1991

K. Marti

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