



Springer

1st
edition

2003, XII, 291 p.

Printed book

Hardcover

Printed book

Hardcover

ISBN 978-1-4020-7597-1

£ 119,99 | CHF 165,50 | 139,99 € |
153,99 € (A) | 149,79 € (D)

Available

Discount group

Science (SC)

Product category

Monograph

Series

Applied Optimization

Other renditions

Softcover

ISBN 978-1-4613-4812-2

Softcover

ISBN 978-1-4419-9155-3

Mathematics : Optimization

Litvinchev, I., Tsurkov, Vladimir

Aggregation in Large-Scale Optimization

When analyzing systems with a large number of parameters, the dimension of the original system may present insurmountable difficulties for the analysis. It may then be convenient to reformulate the original system in terms of substantially fewer aggregated variables, or macrovariables. In other words, an original system with an n -dimensional vector of states is reformulated as a system with a vector of dimension much less than n . The aggregated variables are either readily defined and processed, or the aggregated system may be considered as an approximate model for the original system. In the latter case, the operation of the original system can be exhaustively analyzed within the framework of the aggregated model, and one faces the problems of defining the rules for introducing macrovariables, specifying loss of information and accuracy, recovering original variables from aggregates, etc. We consider also in detail the so-called iterative aggregation approach. It constructs an iterative process, at every step of which a macroproblem is solved that is simpler than the original problem because of its lower dimension. Aggregation weights are then updated, and the procedure passes to the next step. Macrovariables are commonly used in coordinating problems of hierarchical optimization.

Order online at springer.com/booksellers**Springer Nature Customer Service Center GmbH**

Customer Service

Tiergartenstrasse 15-17

69121 Heidelberg

Germany

T: +49 (0)6221 345-4301

row-booksellers@springernature.com

ISBN 978-1-4020-7597-1 / BIC: PBU / SPRINGER NATURE: SCM26008

Prices and other details are subject to change without notice. All errors and omissions excepted. Americas: Tax will be added where applicable. Canadian residents please add PST, QST or GST. Please add \$5.00 for shipping one book and \$ 1.00 for each additional book. Outside the US and Canada add \$ 10.00 for first book, \$5.00 for each additional book. If an order cannot be fulfilled within 90 days, payment will be refunded upon request. Prices are payable in US currency or its equivalent.

Part of **SPRINGER NATURE**