



2003, XII, 291 p.

Printed book

Hardcover

139,99 € | £119.99 | \$169.99

^[1]149,79 € (D) | 153,99 € (A) | CHF

165,50

Softcover

119,99 € | £109.99 | \$149.99

^[1]128,39 € (D) | 131,99 € (A) | CHF

141,50

eBook

96,29 € | £87.50 | \$109.00

^[2]96,29 € (D) | 96,29 € (A) | CHF

113,00

Available from your library or
springer.com/shop

MyCopy ^[3]

Printed eBook for just

€ | \$ 24.99

springer.com/mycopy

I. Litvinchev, Vladimir Tsurkov

Aggregation in Large-Scale Optimization

Series: Applied 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 / or for the Americas call (toll free) 1-800-SPRINGER / or email us at: customerservice@springernature.com. / For outside the Americas call +49 (0) 6221-345-4301 / or email us at: customerservice@springernature.com.

The first € price and the £ and \$ price are net prices, subject to local VAT. Prices indicated with [1] include VAT for books; the €(D) includes 7% for Germany, the €(A) includes 10% for Austria. Prices indicated with [2] include VAT for electronic products; 19% for Germany, 20% for Austria. All prices exclusive of carriage charges. Prices and other details are subject to change without notice. All errors and omissions excepted. [3] No discount for MyCopy.

