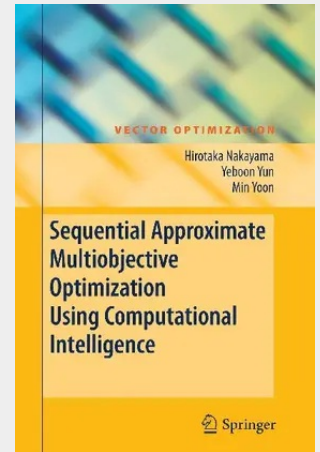


Sequential Approximate Multiobjective Optimization Using Computational Intelligence

Many kinds of practical problems such as engineering design, industrial management and financial investment have multiple objectives conflicting with each other. Those problems can be formulated as multiobjective optimization. In multiobjective optimization, there does not necessarily a unique solution which minimizes (or maximizes) all objective functions. We usually face to the situation in which if we want to improve some of objectives, we have to give up other objectives. Finally, we pay much attention on how much to improve some of objectives and instead how much to give up others. This is called "trade-off." Note that making trade-off is a problem of value judgment of decision makers. One of main themes of multiobjective optimization is how to incorporate value judgment of decision makers into decision support systems. There are two major issues in value judgment (1) multiplicity of value judgment and (2) dynamics of value judgment. The multiplicity of value judgment is treated as trade-off analysis in multiobjective optimization. On the other hand, dynamics of value judgment is difficult to treat. However, it is natural that decision makers change their value judgment even in decision making process, because they obtain new information during the process. Therefore, decision support systems are to be robust against the change of value judgment of decision makers. To this aim, interactive programming methods which search a solution while eliciting partial information on value judgment of decision makers have been developed. Those methods are required to perform flexibly for decision makers' attitude.

Many kinds of practical problems such as engineering design, industrial management and financial investment have multiple objectives conflicting with each other. Those problems can be formulated as multiobjective optimization. In multiobjective optimization, there does not necessarily a unique solution which minimizes (or maximizes) all objective functions. We usually face to the situation in which if we want to improve some of objectives, we have to give up other objectives. Finally, we pay much attention on how much to improve some of objectives and instead how much to give up others. This is called "trade-off." Note that making trade-off is a problem of value judgment of decision makers. One of main themes of multiobjective optimization is how to incorporate value judgment of decision makers into decision support systems. There are two major issues in value judgment (1) multiplicity of value judgment and (2) dynamics of value judgment. The multiplicity of value judgment is treated as trade-off analysis in multiobjective optimization. On the other hand, dynamics of value judgment is difficult to treat. However, it is natural that decision makers change their value judgment even in decision making process, because they obtain new information during the process. Therefore, decision support systems are to be robust against the change of value judgment of decision makers. To this aim, interactive programming methods which search a solution while eliciting partial information on value judgment of decision makers have been developed. Those methods are required to perform flexibly for decision makers' attitude.



160,49 €

149,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783540889090

Medium: Buch

ISBN: 978-3-540-88909-0

Verlag: Springer

Erscheinungstermin: 12.05.2009

Sprache(n): Englisch

Auflage: 1. Auflage 2009

Serie: Vector Optimization

Produktform: Gebunden

Gewicht: 494 g

Seiten: 200

Format (B x H): 160 x 241 mm

