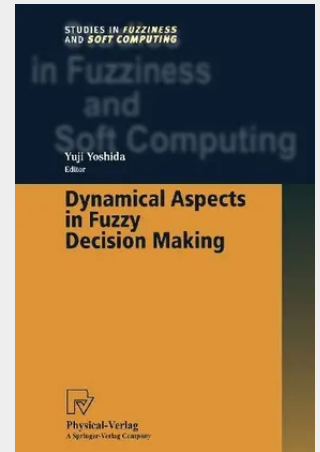


Dynamical Aspects in Fuzzy Decision Making

The concept of fuzziness, inspired by Zadeh (1965), brings us fruitful results when it is applied to problems in decision making. Recently, problems in fuzzy decision making are getting more complex, and one of the most complex factors is dynamics in systems. Dynamical approach to fuzzy decision making has been proposed by Bellman and Zadeh's celebrated paper "Decision-making in a fuzzy environment" (1970). The idea has developed into fuzzy mathematical programming and has been applied in many fields including management science, operations research, control theory, engineering, systems analysis, computer science, mathematical finance etc. Dynamic programming, advocated in Bellman's book "Dynamic programming" (1957), is one of the most powerful tools to deal with dynamics in systems, and Bellman and Zadeh has proposed the optimality principle in fuzzy decision making by (1970) introducing fuzzy dynamic programming. Fuzzy dynamic programming and fuzzy mathematical programming has been making remarkable progress after they were given life by Bellman and Zadeh's paper (1970). In this volume, various kinds of dynamics, not only time but also structure of systems, are considered. This volume contains ten reviewed papers, which deal with dynamics in theory and applications and whose topics are potentially related to dynamics and are expected to develop dynamical study in near future. First, fuzzy dynamic programming is reviewed from a viewpoint of its origin and consider its development in theory and applications.

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