Mathematical Problems in Engineering

Special Issue on
Building Mathematical Models for Multicriteria and Multiobjective Applications

CALL FOR PAPERS

In our daily lives or professional settings, there are many decision problems that involve multiple criteria, which may be conflicting and incommensurable. The complexity of real-world decision and the plethora of factors and criteria that are often involved necessitate the implementation of a sound theoretical framework to structure and model the decision-making process. Methods of Multiple Criteria Decision Making/Aid (MCDM/A) can be applied to support decision makers (DMs) in such task. MCDM/A provides such a framework, as well as a wide variety of methodological tools that are oriented towards the support of the DMs in facing real-world decision problems. Applications in a variety of areas may be done by building mathematical models representing both the preferences of decision makers and the various characteristics of the decision problems at hand. These models are the basis for multicriteria and multiobjective applications in a diversity of areas for structuring processes, analyzing decision components, and supporting decision makers for handling those problems.

The aim of this special issue is to promote and disseminate research and applications among academics and other professionals interested in theory, methodologies, and applications of MCDM/A.

The special issue is open to all types of rigorously developed applications of MCDM/A models and their implementation for solving and analyzing multiple objective or multicriteria decision problems.

This special issue is aligned with the mission of the MPE and seeks bringing high quality papers with significant impact on the theory and practice of business, management, and policy making utilizing decision analysis and multicriteria decision methods.

Authors are welcome to submit papers that consider mathematical models for and applications of multicriteria and multiobjective methods. Final applications could be related to, or consider, but are not limited to, the following topics: energy, environment, climate, sustainability, risk management, reliability, maintenance, project management, production management, supply chain management, logistic, location, transportation, and healthcare.

Potential topics include, but are not limited to:

- Advanced applications of MCDM theory
- Advanced applications of AHP (Analytical Hierarchical Process) and ANP (Analytical Network Process)
- Behavioral issues for building mathematical models in decision making
- Building mathematical models for environmental decision making
- Evolutionary algorithms and MCDM
- Building mathematical models with fuzzy MCDM
- Building mathematical models with goal programming
- Group decision making, negotiations models
- Building mathematical models with multiattribute utility or value theory
- Building mathematical models based on multiobjective optimization
- Applications with multiple criteria classification, ranking, and sorting
- Building mathematical models for multiple criteria decision aiding
- Applications of multiple objectives of combinatorial optimization
- Building mathematical models of multiple objective metaheuristics
- New areas where MCDM is applied outranking methods
- Practical applications of MCDM
- Preference modeling risk and uncertainty

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/mpe/bmmm/.

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