

Call for papers: Mathematical Problems in Engineering

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Special Issue: Building Mathematical Models for Multicriteria and Multiobjective Applications 2017

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 decision models representing both the preferences of decision makers and the various characteristics of the problems at hand, which may include the aggregation of DMs in group decision making (GDM). These built decision models are the basis for applications in a diversity of areas supporting DMs 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.

This special issue is aligned with the mission of the MPE and seeks bringing high-quality papers with significant impact on the practice of business, management, and policy making utilizing MCDM/A.

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:

- Preference modeling and risk and uncertainty modeling
- Behavioral issues for building MCDM/A and GDM models
- GDM and negotiations models
- Building of multicriteria group decision models
- Building mathematical models with multiattribute utility or value theory (MAUT/MAVT)
- Building mathematical models for MCDM/A with partial information
- Building mathematical models based on multiobjective optimization and multiobjective combinatorial optimization
- Use of evolutionary algorithms in MCDM/A
- New areas of MCDM/A in applied outranking methods

Building mathematical models with fuzzy MCDM/A
Advanced applications of AHP (Analytical Hierarchical Process) and ANP (Analytical Network Process)

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