

Centro de Investigação em Matemática e Aplicações Departamento de Matemática

Seminário

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Methodology for modeling processes of participatory decision-making in the environmental field with examples from the Water Debate in Catalonia

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Resumo

The issue of structuring and evaluation of a complex environment problem in the framework of a participatory decision making process is discussed. A methodology that improves the intelligibility and operability of the results arising from participatory deliberative processes is proposed. The methodology can be regarded as a tool for the agencies and stakeholders, who need to carry out and/or participate in the management planning of natural resources. We used the Water Debate held in Catalonia as an example.

The European Water Framework Directive (WFD) issued a legally binding provision to all EU Members entrusting them with the development of water management plans. The WFD also stated that EU Members should encourage citizen participation in developing such plans. One of the several planning processes implemented in Spain has been carried out in Catalonia, encompassing two parallel sub-processes: the District Management River Basin Plan of Catalonia, and the Water Debate of Catalonia. To facilitate these issues, we have devised a methodology to support planning and participatory decision making in the management of natural resources, comprising two interrelated phases. The first one makes use of Bayesian networks and hierarchies of objectives to build a complete diagram, called Master Multicriteria Bayesian Network. The second one combines several Multicriteria Bayesian Networks in order to integrate in a single model different subjects relating to the same water system. This phase establishes a networking method for the construction of a simple but complete diagram, called Integral Multicriteria Bayesian Network. This allows the computation of Pareto optimal sets of strategies, which can be processed in various different ways, some of which are discussed in this paper.