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Session Information

Session Name: Applications of Grey System Theory and Modeling

Abstract for the Session:

The fields of science, social science and engineering technology are all involved in dealing with uncertainty questions and imperfect information in varying degrees. Due to the data obtained from actual system have messy messages, which are either uncertain or incomplete, if we use the pure mathematical assumptions to eliminate or ignore this uncertainty, the results are often less than ideal. On the contrary, if we can deal with the information appropriately, it may help to solve the problems of related actual systems. Because of this, researchers have been trying to find an effective way to deal with uncertainty and incompleteness information. Hence, two methods of statistical probability and fuzzy theory are found, and they have been widely applied in practical fields. However, these methods sometimes need additional data information or knowledge, which are not easy to get. Therefore, a number of related research methods are generated, such as grey system theory and rough set theory, which are called soft computing methods in engineering field. For the above reasons, this session has been proposed.

In our session, it not only introduces some new results from our recent work, but also discusses the topics of state-of-the-art system modeling and simulation field, and it is also hoped to open a new direction for the application in modeling. The following lists show the five papers to be presented in this session. The first and second paper is based on using grey relational grade, which in the brand citizenship behavior and optimal car selection. The third paper is using GM(0,N) model to analyze the influence factor in bed and breakfast. The fourth paper is the study in error analysis for GM(1,1) model. In the last paper, is based on engineering, to introduce the application in the intelligent score device for table tennis.