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Strategy, Voting, Power and Proof

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The referred book presents an interesting overview of several topics in which exact sciences, social sciences and political analysis meet each other and mutually contribute to their creative development. They touch the problems of strategical behaviour, political power and social optimality of control decisions.

The content of the book is divided into two main parts and it deals with five principal subjects. Each subject is introduced and treated on a basic level in one of five chapters of the first part and then its revision and advanced treatment is given in analogous five chapters of the second part. These principal subjects are: escalation of conflict investigated mostly by game theoretical modelling, game theoretic model of international conflict, yes–no voting procedure and robustness of the voting system, political power viewed mostly from the coalition game theory positions, and, finally, the social choice with some related optimization problems. References and the Index are included at the end of the book.

All topics are presented in a clear, lucid style and illustrated by examples taken from reality (e. g., East–West arm race, U. S. Federal voting system, Canadian Constitution and voting procedures, Cuban missile crisis, European Economic Community calculations, and others) which are consequently focused to political science. This orientation to the view of single discipline supports the general feeling of the unity of the text which is, objectively, divided into rather different and separable topics.

The reader of the referred book is not assumed to have high mathematical prerequisites (some elementary algebra, no calculus) or special education in social sciences. The author has evidently written his work as a specialized textbook for specific courses on mathematical applications in social and political sciences. It fully satisfies the demands following from this predestination. It is clearly written, well organized and respecting the pedagogic principles of explanation. The theoretical conclusions are discussed and illustrated by attractive examples. Anyhow, the students should not be the single readers of it. It gives a good and qualified overview of the main disciplines connecting exact and social sciences and in this sense it can be very useful for any mathematician or social scientist who is going to contribute to these connections.

The general trends in modern applied mathematics and information or control sciences show an increasing rate of non-traditional and non-technical applications. Those applications were motivated by a rapid development of mathematical methods, as well as of computers and computer science. On the other hand, they motivate the interest of mathematicians in the development of mathematical disciplines being able to model the complexity and vagueness of the social relations and political or macroeconomic processes. The referred book can open the way to non-traditional applications also for advanced mathematicians who become interested in it.

For all these reasons, the book can be recommended not only for university courses on politology but also for active researchers from both sides – mathematics and social sciences – looking for an introduction to the contract-points between their branches.

Milan Mareš