

Special Issue

Hahn-Banach Theorem, Polynomial Approximation, Moment Problems, and Related Inverse Problems

Message from the Guest Editor

As is well-known, Hahn-Banach-type results have their main applications in solving moment problems, the subdifferentiability of convex operators, controlled regularity, and characterizing the isotonicity of convex operators defined on a convex cone in terms of their subdifferentials. Such problems represent motivations of finding necessary and sufficient conditions for the existence of a linear extension from a vector subspace to the entire domain space, which is dominated by a convex operator and dominates a concave operator. These convex (and, respectively, concave) operators are defined on arbitrary convex subsets. For applications, topological versions of such results are emphasized. Polynomial approximation on Cartesian products of unbounded closed intervals has been also applied to characterize the existence and uniqueness of the solution for some Markov moment problems in terms of quadratic forms. One partially solves the difficulty arising from the fact that, in several dimensions, there exist nonnegative polynomials that are not sums of squares. We invite the authors of related papers to submit them for publication in this Special Issue.

Guest Editor

Prof. Dr. Octav Olteanu

Department of Mathematics-Informatics, University Politehnica of Bucharest, Splaiul Independentei 313, 060042 Bucharest, Romania

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

Editor-in-Chief

Prof. Dr. Francisco Chiclana

School of Computer Science and Informatics, De Montfort University,
The Gateway, Leicester LE1 9BH, UK

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