

## 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.

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### Guest Editor

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### Deadline for manuscript submissions

closed (31 July 2021)



## Mathematics

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