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Mathematical Optimization and Control: Methods and Applications

Guest Editors:

Prof. Dr. Jose de Jesus Rubio

Prof. Dr. Jeff Pieper

Prof. Dr. Jaime Pacheco Martinez

Prof. Dr. Mu-Yen Chen

Deadline for manuscript submissions:
closed (31 July 2025)

Message from the Guest Editors

Mathematical optimization is the discipline of adjusting a mathematical process so as to optimize (make the best use of) a specified set of parameters without violating certain constraints. Mathematical optimization uses optimization algorithms as the random research for the maximization or minimization of functions without violating certain constraints. Examples of these optimization algorithms are the genetic, bat, butterfly, grey wolf, particle swarm, ant colony, bee colony, and Bayesian algorithm. Additionally, the convergence of the mentioned optimization algorithms could be analyzed.

Mathematical control compares the value of a variable being controlled with the desired value, and applies the control signal to bring the variable to a desired value. It brings the necessity to research for control algorithms. Examples of these control algorithms are the adaptive, neural network, fuzzy, backstepping, sliding mode, robust, feedback, observer-based algorithms. Additionally, the stability of the mentioned control algorithms could be analyzed.

The objective of this Special Issue of Mathematics is to cover the optimization and control algorithms.

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Editor-in-Chief

Prof. Dr. Francisco Chiclana
School of Computer Science and Informatics, De Montfort University, The Gateway, Leicester LE1 9BH, UK

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.

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Mathematics Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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