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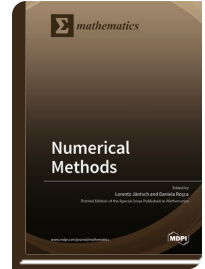
## Numerical Methods

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Numerical methods are a specific form of mathematics that involve creating and use of algorithms to map out the mathematical core of a practical problem. Numerical methods naturally find application in all fields of engineering, physical sciences, life sciences, social sciences, medicine, business, and even arts. The common uses of numerical methods include approximation, simulation, and estimation, and there is almost no scientific field in which numerical methods do not find a use. Results communicated here include topics ranging from statistics (Detecting Extreme Values with Order Statistics in Samples from Continuous Distributions) and Statistical software packages (dCATCH—A Numerical Package for d-Variate near G-Optimal Tchakaloff Regression via Fast NNLS) to new approaches for numerical solutions (Exact Solutions to the Maxmin Problem  $\max\|Ax\|$  Subject to  $\|Bx\| \leq 1$ ; On q-Quasi-Newton's Method for Unconstrained Multiobjective Optimization Problems; Convergence Analysis and Complex Geometry of an Efficient Derivative-Free Iterative Method; On Derivative Free Multiple-Root Finders with Optimal Fourth Order Convergence; Finite Integration Method with Shifted Chebyshev Polynomials for Solving Time-Fractional Burgers' Equations) to the use of wavelets (Orthonormal Wavelet Bases on The 3D Ball Via Volume Preserving Map from the Regular Octahedron) and methods for visualization (A Simple Method for Network Visualization).



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