The Mathematics of Economics: The Symbolic and Statistical Language of Human Behavior under Material Constraint

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Message from the Guest Editor

This Special Issue will explore the mathematical underpinnings of economics, from optimization to game and graph theory and the emergence of machine learning and artificial intelligence.

Computational tools and the advent of data at extremes in volume, velocity, and variety have given rise to a distinct branch of mathematics within economics. Econometrics, the traditional redoubt of statistical tools within economics, can no longer be content with conventional tools for measuring risk, indexing, panel data analysis, and time-series analysis. Supervised machine learning, including deep learning through artificial neural networks, now complements linear regression. Clustering, decomposition, and manifold learning harness the power of unsupervised machine learning so that data can speak for itself without human labels or the training of models.

This Special Issue invites contributions addressing any of these applications of mathematics to economics. Whether as a symbolic language or as a tool for managing and interpreting immense amounts of data, mathematics holds the key to contemporary economics.

Special Issue

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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.

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