

## Special Issue

# Mathematical Fundamentals of Sustainability and Applications

### Message from the Guest Editor

The mathematical foundations of sustainability refer to mathematical principles, models, and techniques aiming to understand, quantify, and guide actions toward achieving sustainable systems, whether ecological, economic, or social. These foundations enable us to model complex systems, forecast long-term outcomes, optimise resource use while balancing environmental limits, and ensure the whole system's viability. Here is a breakdown of the key mathematical areas involved:

- Dynamical systems, control, and viability theory;
- Optimisation techniques;
- Statistical and data science;
- Game and decision theory;
- Systems theory and cybernetics;
- Thermodynamics and entropy in sustainability.

Sustainability theory is applied to a wide variety of domains to help achieve a balance between economic development, environmental protection, and social welfare. Although we do not want to limit the study topics, this Special Issue seeks research on the mathematical foundations of sustainability science. For this reason, the submitted papers are expected to contain an attempt or some content oriented toward such mathematical foundations.

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### Guest Editor

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### Deadline for manuscript submissions

closed (28 February 2026)



## Mathematics

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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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### Editor-in-Chief

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