Special Issue

Symmetry Methods for Differential Equations

Message from the Guest Editors

This Special Issue aims to explore advanced topics in symmetry analysis, particularly in the context of nonlinear differential equations across diverse areas of applied mathematics. It highlights both classical and modern developments in the field, with an emphasis on innovative approaches to invariant functions, reduction techniques and the discovery of hidden or generalized symmetries. The following is a breakdown of the themes that will be covered:

- Invariant functions and the reduction of differential equations.
- Generalized, hidden and nonlocal symmetries.
- Variational symmetries for regular and singular dynamical systems.
- The effects of Dirac's constraint on variational symmetries.
- New techniques and innovative methods (computational tools, algebraic tools, etc.) for the treatment of symmetry analysis for nonlinear differential equations.
- The classification of differential equations and its relation to other methods for the construction of solutions.
- Applications of symmetry analysis in all areas of applied mathematics.

Guest Editors

Dr. Andronikos Paliathanasis
Institute of Systems Science, Durban University of Technology, Durban 4000, South Africa

Prof. Dr. Peter Gavin Lawrence Leach
School of Mathematics, Statistics and Computer Science, University of KwaZulu-Natal, Durban 4000, South Africa

Deadline for manuscript submissions

28 February 2026

About the Journal

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.

Editor-in-Chief

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

Author Benefits

High Visibility:
indexed within Scopus, SCIE (Web of Science), RePEc, and other databases.

Journal Rank:
JCR - Q1 (Mathematics) / CiteScore - Q1 (General Mathematics)

Rapid Publication:
manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.4 days after submission; acceptance to publication is undertaken in 2.4 days (median values for papers published in this journal in the first half of 2025).