

# Special Issue

## Mathematical Analysis: Theory, Methods and Applications

### Message from the Guest Editors

Mathematical analysis can be traced back to the Ancient Greeks but remains relevant today, in no small part due to its vast connections with other areas of mathematics such as partial differential equations, calculus of variations, and functional analysis. However, it has become clear that more sophisticated analytical methods may be needed to handle problems which are nonlinear or have a fractal geometry, where classic analytical tools (such as the Browder degree theory or standard Sobolev trace theory) may not work. Indeed, with recent advances in materials science and related areas such as liquid crystal optics, metasurface design, and quantum optics, there is renewed interest in applying analytical methods to solve meaningful problems in the physical sciences. We welcome submissions showcasing original research on mathematical analysis and its applications are particularly welcome, especially those related to partial differential equations, alongside advances in analytical methods, in particular for the treatment of nonlinear problems (broadly defined).

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### Guest Editors

Dr. Eric Stachura

Department of Mathematics, Kennesaw State University, Kennesaw, GA, USA

Dr. Timothy E. Faver

Department of Mathematics, Kennesaw State University, Kennesaw, GA, USA

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### Deadline for manuscript submissions

31 January 2027



## Mathematics

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*Mathematics*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[mathematics@mdpi.com](mailto:mathematics@mdpi.com)

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## About the Journal

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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

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

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