Special Issue

Finite Element Method and Applications in Mathematical Modeling and Engineering: Modeling, Analysis, and Simulations

Message from the Guest Editors

This Special Issue focuses on novel FEM applications in wave propagation problems and topology optimization, emphasizing algorithmic developments, computational efficiency enhancements, and multiscale modeling frameworks. Aligning with the journal's scope of "Interdisciplinary Research in Mathematical Modeling and Computational Engineering," this Special Issue highlights the transformative role of mathematical tools in addressing real-world engineering challenges. We aim to curate a collection of 10+ high-quality articles to establish a dialogue between academia and industry. Original research and review articles are welcome. The scope of this Special Issue includes, but is not limited to, the following topics:

- Topology optimization of acoustic/elastic metamaterials;
- Efficient FEM discretizations for nonlinear wave equations;
- GPU-accelerated FEM techniques and adaptive mesh refinement;
- Hybrid numerical methods for multiphysics-coupled systems;
- Inverse design algorithms and uncertainty quantification via FEM.

We look forward to receiving your outstanding contributions!

Guest Editors

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Deadline for manuscript submissions

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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

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