

Special Issue

Symmetry and Finite Element Method in Civil Engineering

Message from the Guest Editors

Symmetry principles and the finite element method (FEM) play pivotal roles in advancing civil engineering, offering innovative solutions for structural design, material behavior analysis, and dynamic response prediction. This Special Issue seeks to bridge this gap by showcasing cutting-edge research at the intersection of symmetry, computational mechanics, and civil engineering applications. We seek the submission of papers that explore how symmetry principles enhance FEM-based modeling, optimization, and analysis in civil engineering systems. Topics include symmetry-aware FEM algorithms, applications in structural optimization, material homogenization, and dynamic/thermal analyses, as well as case studies demonstrating efficiency gains in large-scale projects. Original research articles are welcome, covering themes such as symmetry in structural design, FEM advancements, topology optimization, multiscale modeling, and AI-driven simulations. Submissions addressing challenges in symmetry preservation, computational scalability, and real-world validation are encouraged.

Guest Editors

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Deadline for manuscript submissions

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About the Journal

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

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