

Multiscale Modeling, Analysis, and Simulation

A SIAM Interdisciplinary Journal

Editorial Policy

Centered around multiscale phenomena, MMAS is an interdisciplinary journal focusing on the fundamental modeling and computational principles underlying various multiscale methods. The mission of the journal is to bridge the gap in multiscale research between mathematics and various application disciplines by publishing research papers and survey articles that augment the fundamental ways we model and predict multiscale phenomena. Particularly emphasized is the interplay between analysis and modeling, modeling and simulation, and mathematics and various applications.

MMAS covers a broad range of areas including biology, chemistry, engineering, environmental science, fluid dynamics, geophysics, information science, materials science, and physical science. Research papers that explore new concepts and innovative computational paradigms and reveal new physical phenomena are especially welcome. Papers on software and applications are as valued as fundamental analyses addressing the multiscale issues. However, those that deal with a specific technical issue in a particular application, and do not contain conceptually new ideas and will not benefit other application fields, will not be considered. Unlike application-oriented journals in specific application areas, MMAS focuses on conceptually new ideas and methodology that have a clear mathematical structure and can be used in different application fields.

The journal also features survey articles in various subfields that convey the essential information of that field to a broad audience and foster cross-disciplinary collaborations.

To be considered by the journal, a paper should be in one (or a combination) of the four categories: **(a)**: papers that develop a new multiscale model which provides new insight into the scientific problem; **(b)**: papers devoted to mathematical analysis of modeling errors across scales which leads to an improved understanding of the underlying model; **(c)**: papers that develop new multiscale computational methods which give superior performance compared to existing methods; **(d)**: papers devoted to direct numerical simulations or experimental study of multiscale phenomena which leads to an improved understanding of the scientific problem. Multiscale research that combines two or more of these approaches in an integrated fashion is especially encouraged.

While the journal has no formal limits on manuscript length, papers exceeding 30 journal pages will be reviewed more closely to ensure that the excess is fully justified.

Papers that have been published elsewhere will not be considered. An exception may be made for a substantially revised conference proceedings paper, provided that it is so identified in the submission letter and in the paper itself.