Special Issue

Multiscale Theories, Models and Applications for Engineering Systems

Message from the Guest Editors

The modeling of a complex engineering system by covering different spatial and temporal scales, from microscopic to macroscopic, is a challenging task. Without a fundamental understanding of the physics and proper modeling techniques, the efforts and computational costs can grow exponentially when trying to solve the problem of simultaneously crossing different scales. Multiscale mathematics and theories can bridge the gaps between different scales and put the modeling on a solid footing. The successful development of new multiscale models always comes with a careful selection of models and theories ,while bearing related physics constraints in mind. The efficiency of information passing and integration is also critical for controlling the computational costs of a multiscale model to provide practical solutions. This Special Issue aims to publish original and novel theories, models and applications related to multiscale and multiphysics problems. Potential topics of interest include, but are not limited to, fluid dynamics, materials, meteorology, physics, mathematics, and chemistry. The adoption of multiscale methods to interdisciplinary applications is also encouraged.

Guest Editors

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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.

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