Artificial Intelligence for Fluid Mechanics

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Message from the Guest Editors

Dear Colleagues,

AI methods continuously penetrate into various fields of research and industry. Huge amounts of data in fluid mechanics research are nowadays produced by simulations or experiments.

This Special Issue will present cutting-edge work on novel AI technologies that advance our understanding of fluid mechanics problems. Manuscripts developing AI models, dealing with training on computational or experimental fluid mechanics data, making use of HPC systems in this context, and employing the final models, e.g., in inferencing at simulation runtime to model unresolved small-scale phenomena or in experiments in processing and mining data, are welcome. This includes coupling methods employing state-of-the-art computing hardware to bring traditional fluid mechanics workflows and AI workflows together.

Topics of interest for this Special Issues include, but are not limited to, the following: CFD, multi-physics simulations, experimental fluid mechanics, machine learning, physics-informed neural networks, deep learning, and AI-based subgrid-scale or surrogate modeling. Manuscripts describing original theoretical and applied research are welcome for submission.

Special Issue

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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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