



## Machine Learning and Modern Numerical Methods in Partial Differential Equations

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### Message from the Guest Editors

Machine learning and its related numerical modelling are emerging tools in solving partial differential equations which underpin science and engineering. It needs to mention that in practical applications, machine learning has recently attracted great attentions in modelling and solving complex systems. This special issue will bring together experts in applied mathematics and computational mathematics to discuss fundamental problems and practical applications of machine learning and its related methodologies in solving partial differential equations and modelling complex systems. This special issue also includes papers around modern numerical techniques based on machine learning in interdisciplinary fields.

Topics of interest include, but not limited to:

- Machine learning-based numerical algorithm for solving high dimensional PDEs.
- Deep reinforcement learning in control problems
- Machine learning approach in uncertainty quantification
- Reduced order modelling in complex systems
- Mathematical methods in kernel learning

Machine learning and artificial intelligence in fluid dynamics, which includes recent significant developments on modelling and computations.





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## Message from the Editor-in-Chief

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