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Machine learning closures for model order reduction of thermal fluids

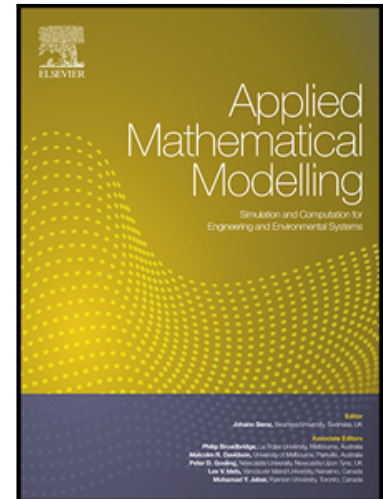
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Highlights

- A machine learning closure approach is proposed for reduced order modeling of thermal fluids.
- A single hidden layer feed forward neural network architecture is developed for Boussinesq equations.
- An extreme learning machine strategy is implemented for fast training.
- The robustness of the model has been tested by considering the differentially heated cavity flow problem.
- It is shown that the proposed model significantly improves the performance of reduced order models.

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