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MACHINE LEARNING FOR COMPUTATIONAL MECHANICS ACROSS SCALES

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ABSTRACT

This mini-symposium brings together researchers from mechanics, applied mathematics, and related engineering disciplines to explore the integration of machine learning into computational mechanics. The focus is on leveraging data-driven methods to enhance modeling, simulation, and design across a wide range of scales and physical phenomena.

Particular emphasis is placed on physics-based machine learning approaches that incorporate physical principles and constraints to improve consistency, interpretability, and generalization.

We welcome theoretical developments, algorithmic innovations, and application-oriented studies that utilize machine learning to advance understanding and computation in mechanics.

The goal is to foster interdisciplinary exchange and highlight cutting-edge advances that push the boundaries of computational mechanics through intelligent, physically grounded learning strategies.