ADVANCES IN NUMERICAL METHODS FOR COUPLED FLOWS IN CIVIL AND ENVIRONMENTAL ENGINEERING

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ABSTRACT

Many complex engineering and environmental challenges involve fluid flows coupled with other physical processes, such as the transport of particles or droplets, interactions with solids, and the presence of free surfaces [1], among others. This minisymposium will highlight recent advancements in the development of numerical models to address these phenomena, which often require solving multiple sets of equations and employing advanced numerical techniques across different domains [2] to accurately simulate and predict their behavior. In addition to the complexity of the physical interactions, such problems typically demand high computational resources. Therefore, high-efficiency algorithms and parallelization strategies have become critical to reducing computational costs and ensuring the affordability of simulations. Contributions to this minisymposium will provide new coupled numerical methods and models, their recent use in addressing complex engineering problems, and advances in their computational efficiency.

REFERENCES

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