

PHASE-FIELD INTERFACE MODELING FOR MULTIPHASE AND MULTIPHYSICS SIMULATIONS

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MINISYMPOSIUM

Phase-field modeling offers a powerful and unified treatment of evolving physical interfaces with topological changes on fixed domains. This mini-symposium focuses on the computational aspects of phase-field modeling for multiphase and multiphysics simulations. From a computational mechanics and applied mathematics standpoint, phase-field models pose numerous challenges, namely accuracy, conservation, stability, and proper handling of interface profiles and geometry. We invite participation in novel phase-field formulations and computational methods for interface problems found in, but are not limited to, multiphase flows, fluid-structure interaction, solid-to-solid contacts and rupture phenomena, and interactions with other physical fields. This mini-symposium aims to provide a platform for investigators to disseminate and discuss phase-field-based approaches for wide-ranging multiphase/multiphysics problems in numerous emerging and traditional engineering applications. Contributions to software implementation, parallel computing, acceleration techniques, reduced-order modeling, a posteriori error-control, mesh adaptation, post-processing and visualization techniques are encouraged.