

Modeling Multiphase Multicomponent Porous Flows

Wednesday, 12 June 2024 09:30 (45 minutes)

This talk will review structural properties of the equations used to model porous flows involving multiple components undergoing phase transitions. These equations only model the gross properties of these problems since a precise description of the physical system is neither available nor computationally tractable. The saddle point structure resulting from the interaction between dissipation and free energy (or entropy) of the fluids will be highlighted. The construction of numerical schemes which are robust in the presence of degeneracy, and solution techniques which exploit the saddle point structure, will be considered.

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