SEMINARIO

Eduardo Abreu

Dep. Applied Mathematics, University of Campinas, Brasil

A numerical approach for solving type Buckley-Leverett equation with non-equilibrium capillary pressure effects

Abstract: We formally discuss a numerical approach for the simulation of a highly nonlinear two-dimensional model for immiscible incompressible two-phase flows in heterogeneous porous media to deal with dynamic capillary pressure. Hybridized mixed finite elements and domain decomposition procedures are used for the spatial discretization of the equations. Proper locally conservative finite volume techniques are used for a balancing discretization of the first-order hyperbolic flux and the dispersive behavior inherent of the pseudo-parabolic model. Our numerical experiments confirm the viability of the proposed formulation based on computational simulations subject to high-contrast heterogeneous porous media nonlinear flows.

Sala de Grados I, Facultad de Ciencias
Martes 14 de Mayo de 2019 (17:00)
Organiza: GIR: Modelización, Teoría y Análisis Numérico en Problemas de Optimización y Ecuaciones de Evolución.