

Analysis and Applied Mathematics Seminar

Mathematical Analysis and Numerical Methods for the modified Buckley-Leverett equations

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Abstract: In this talk, I will discuss a new class of entropy solutions of the modified Buckley-Leverett equations, which model underground oil recovery. Analytic study on the computational domain reduction and traveling wave solution stability will be provided. A variety of numerical examples will be given. They show that the solutions may have many different profiles depending on the initial conditions, diffusion parameter, and the third-order mixed derivatives parameter. The results are consistent with the study of traveling wave solutions and their bifurcation diagrams.

Monday, November 18 at 4:15 PM in 636 SEO