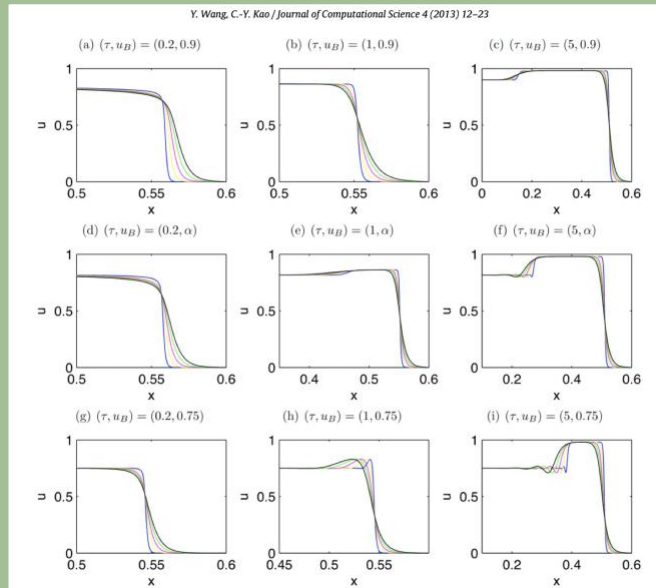


Math Colloquium Series

YING WANG

UNIVERSITY OF OKLAHOMA



DATE:

FEBRUARY 4, 2020

TIME:

12:30PM-1:30PM

(REFRESHMENTS AT 12:15PM)

LOCATION:

UC 122

Mathematical Analysis and Numerical Methods for an Underground Oil Recovery Model

Abstract: In this talk, I will discuss a new class of entropy solutions of the modified Buckley-Leverett equation, which models underground oil recovery. This model includes a third-order mixed derivatives term resulting from the dynamical effects in the pressure difference between the two phases. Analytic study on the computational domain reduction will be provided. Strong stability preserving operator splitting method will be introduced. 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.

For More Information please contact the UCCS Math Department at
(719) 255-3311 www.uccs.edu/math