

عنوان مقاله:

Analysis of the interface between two immiscible fluids in porous media considering special cases

محل انتشار:

دومین کنفرانس ملی پیشرفت های اخیر در مهندسی و علوم نوین (سال: 1398)

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خلاصه مقاله:

Analysis of the interface between two immiscible fluids in porous media is considered as a classic problem with numerous industrial applications. Interface between two fluids could be unstable. In addition to defining dimensionless equations for a generalized geometry, this study developed equations for special cases. For the problem in one dimension, linear steady state analysis was done and it is indicated that steady state condition is maintained as long as the density of the upper fluid is less than the density of the lower fluid. By using the K. Method , an analytical solution for Boussinesq equation is presented and the results for constant and linear flux are obtained and discussed. With a Power-law flux at the origin and dimensional analysis, the drilling mud invasion into a permeable aquifer problems becomes a nonlinear boundary value problem that have been investigated in this paper. The obtained .results show that the K-Method has a good ability for investigation of B-L problems such as this solved problem

کلمات کلیدی:

interface, immiscible fluids, Porous media, Kourosh Method, Boussinsq Equation

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