International J. of Math. Sci. & Engg. Appls. (IJMSEA) ISSN 0973-9424, Vol. 3 No. IV (2009), pp. 199-208

DISPERSION OF MISCIBLE FLUID IN SEMI INFINITE POROUS MEDIA WITH UNSTEADY VELOCITY DISTRIBUTION.

R. K. MEHER, M. N. MEHTA AND S. K. MEHER

Abstract

In this paper a theoretical model of one dimensional longitudinal dispersion of miscible fluid flow in porous media with diffusivity coefficient is studied. Analytical solutions are developed for the dispersion problem in non adsorbing and adsorbing, semi-in finite porous media in which the flow is one dimensional and the average flow velocity is unsteady. The graphical solutions are also obtained for a set of data assumed. The objective of this paper is to give a brief account for the development of nonlinear partial differential equation which gives the concentration `C' for any value of `x' and `t'.

Key Words: Miscible fluid, Burger equation, Dispersion, Concentration