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The Multiphase Flow Analysis for Fluid in Porous Rocks

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Abstract

The flow of multiphase to porous sources is a complex matter with a long and rich history in the field of fluid mechanics. This is a topic that has important technological applications, especially in the construction of oil on petroleum reservoirs and so on. The flow of single-phase fluid in a pore area is best illustrated by Darcy's law. In the petroleum industry and in other technological applications, transportation is modeled by submitting a multiphase generalization of Darcy law. In these connections, different pressures are defined in each phase which includes differences known as capillary pressures, determined by interface inconsistencies, micro pore geometry and surface chemistry of the solid surface. With flow rates, relative access is defined which associates the flow rate of each fluid volume with its pressure gradient. In the present paper, there are discoveries and analyzes about the equation for the distribution of liquid flow in perforated rocks and other important results have been established. Permeability is the activity of a type of rock that varies in pressure, temperature, etc., and does not depend on the liquid. The effect of liquid on the flow rate is calculated according to the viscosity term. The number of entrances to a given stone depends on the size of the holes in the rock and the degree of connection of the empty space. Pressure pulses listen to the distribution equation and not the wave equation. Then they move at a slower pace than they do at a steady pace. The results shown in this paper are very useful in the science of the world and in the petroleum industry.

Keywords: Darcy Act, Diffusion equation, Multiphase Flow, Hollow Stone.

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