



## **Fractional Partial Differential Equations for calculating output oil pressure**

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A mathematical model will be presented to do more precise calculations for estimating the output pressure of oil located four kilometers deep underground in Mexico using Fractional Calculus. This model uses three fractional partial differential equations with triple porosity and triple permeability. It aims to improve the results obtained with classical partial differential equations by using instead fractional partial differential equations. This model is based: 1.- Relation between fractal dimension and porosity. 2.- Fractal geometry and fractional calculus. if a variable  $t$  move in a fractal object of dimension  $v$ . It will induce a fractional derivate of order  $v$  (caputo)