Application of homotopy perturbation method for fractional partial differential equations

Elbeleze, A.A., (Universiti Sains Islam Malaysia)
Kilicman, A., (Universiti Putra Malaysia)
Taib, B.M., (Universiti Sains Islam Malaysia)

Fractional partial differential equations arise from many fields of physics and apply a very important role in various branches of science and engineering. Finding accurate and efficient methods for solving partial differential equations of fractional order has become an active research undertaking. In the present paper, the homotopy perturbation method proposed by J-H He has been used to obtain the solution of some fractional partial differential equations with variable coefficients. Exact and/or approximate analytical solutions of these equations are obtained.

Caputo fractional derivative; Fractional calculus; Fractional partial differential equations; Homotopy perturbation method

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