An algorithm for solving multi-term diffusion-wave equations of fractional order

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Abstract

In this paper an algorithm, based on a new modified homotopy perturbation method (MHPM), is presented to obtain approximate solutions of multi-term diffusion-wave equations of fractional order. To illustrate the method some examples are provided. The results show the simplicity and the efficiency of the algorithm.

Keywords: Fractional differential equations; Multi-term diffusion-wave equations; Caputo’s derivative; Modified homotopy perturbation method; Mittag-Leffler function