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A COMPARATIVE STUDY ON SOME SEMI–ANALYTICAL METHODS FOR THE SOLUTIONS OF FRACTIONAL PARTIAL INTEGRO–DIFFERENTIAL EQUATIONS

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Abstract. This work focuses on the semi-analytical methods for obtaining the solutions of time fractional partial integro-differential equations. Adomian decomposition method (ADM) and homotopy perturbation method (HPM) are successfully applied. Further, the modified version of homotopy perturbation method is applied which is comparatively more accurate than the other two methods. These methods are shown to be efficient and converge rapidly to the exact solution. Graphs are plotted and tabular data are recorded which represents the accuracy of the proposed techniques.

Mathematics subject classification (2020): 35R11, 35R09, 65R20, 26A33.

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