

## Reduced Differential Transform Methods for Solving the Fractional Diffusion Equations

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**Abstract :** In this paper, the solution of fractional diffusion equations is presented by means of the reduced differential transform method. Fractional partial differential equations have special importance in engineering and sciences. Application of reduced differential transform method to this problem shows the rapid convergence of the sequence constructed by this method to the exact solution. The numerical results show that the approach is easy to implement and accurate when applied to fractional diffusion equations. The method introduces a promising tool for solving many fractional partial differential equations.

**Keywords :** fractional diffusion equations, Caputo fractional derivative, reduced differential transform method, partial

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