

NUMERICAL SOLUTION FOR TIME-FRACTIONAL MURRAY REACTION-DIFFUSION EQUATIONS VIA REDUCED DIFFERENTIAL TRANSFORM METHOD

Muhammed Yiğider¹ and Serkan Okur¹

¹Erzurum Technical University

May 18, 2021

Abstract

In this study, solutions of time-fractional differential equations that emerge from science and engineering have been investigated by employing reduced differential transform method. Initially, the definition of the derivatives with fractional order and their important features are given. Afterwards, by employing the Caputo derivative, reduced differential transform method has been introduced. Finally, the numerical solutions of the fractional order Murray equation have been obtained by utilizing reduced differential transform method and results have been compared through graphs and tables. Keywords: Time-fractional differential equations, Reduced differential transform methods, Murray equations, Caputo fractional derivative.

Hosted file

26.04 Murray paper.pdf available at <https://authorea.com/users/414424/articles/522458-numerical-solution-for-time-fractional-murray-reaction-diffusion-equations-via-reduced-differential-transform-method>

Hosted file

Tablo, Grafik Murray dosyas\selectlanguage{polish}1.\selectlanguage{english}.pdf available at <https://authorea.com/users/414424/articles/522458-numerical-solution-for-time-fractional-murray-reaction-diffusion-equations-via-reduced-differential-transform-method>