Analytic Approximate Solution for Harmonic Oscillator Equation with Fractional Order Damping Term

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A B S T R A C T

In this paper, analytical and numerical results are reported on the approximate solution for harmonic oscillator equation with fractional order damping term by Adomian Decomposition Method (ADM). The ADM solution is then compared with the well-known series solution of the problem. It is found that the results lead to an excellent agreement. The graphical representation of the solution has been presented for different values of damping coefficient and frequency of the oscillator.

Keywords: ADM, harmonic oscillator, Power series method.

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