

A COMPARISON BETWEEN ADOMIAN DECOMPOSITION
METHOD AND WAVELET METHODS FOR SOLVING
SOME INTEGRO-DIFFERENTIAL EQUATIONS

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Abstract: In this work, the Adomian decomposition method is applied to solve linear Volterra and Fredholm integro-differential equations. This method is a powerful tool to analysis strongly linear and nonlinear problems. Some numerical examples are presented to compare the results obtained by Adomian decomposition method with some kind of wavelets methods found in literatures. The results showed that this method is more efficient and easy to use than wavelets methods.

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Key Words: Adomian decomposition method, wavelets methods, itegro-differential equations

1. Introduction

Many problems from physics, mechanics, chemistry, astronomy, biology, economics and electrostatics lead to integral and integro-differential equations.

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