

Abstract

In this thesis, we solve integro-differential equations (Fredholm and Volterra) of second kind by using Multistage Optimal Homotopy Asymptotic Method (MOHAM). The reliability and efficiency of MOHAM is also tested.

Chapter 1 includes fundamentals that assist to assimilate the phrasings which are going to be utilized later. Basic definitions in this chapter help to make a good concept about the theory of integro-differential equations.

In chapter 2, we will discuss Multistage Optimal Homotopy Asymptotic Method (MOHAM) and its algorithm.

Chapter 3 includes numerical examples which are solved by using Multistage Optimal Homotopy Asymptotic Method (MOHAM).

In Chapter 4, the solutions obtained by MOHAM are compared with the solutions obtained for similar examples by other methods and found that MOHAM is more efficient and reliable.