Abstract

This dssertation is related with the numerical solutions of Volterra Partial Integro Differential equations (VPIDE) by using Optimal Homotopy Asymptotic method (OHAM). The efficiency and accuracy of OHAM have been shown by testing some numerical cases of VPIDEs. The maximum error is estimated for all numerical methods and compare with OHAM, whose maximum error is least among these methods. It has been also proven graphically that how the OHAM solution made a close match to exact solution while other did not.

In Chapter 1, there are basic ideas and preliminaries related to this work. Chapter 2 includes detail description of OHAM, while in Chapter 3, we discuss some numerical cases of VPIDE, which are solved by OHAM. In Chapter 4 gives error analysis, while Chapter 5 incudes graphical illustration.