

# **Application of differential transform method on nonlinear integro-differential equations with proportional delay**

## **ABSTRACT**

In this work, we applied the differential transform method, by presenting and proving some theorems, to solve the nonlinear integro-differential equation with proportional delays. This technique provides a sequence of functions which converges to the exact solution of the problem. In order to show the power and the robustness of the method and to illustrate the pertinent features of related theorems, some examples are presented.

**Keyword:** Integro-differential equation; Proportional delay; Differential transform method; Closed-form solution