# Error estimations of Homotopy perturbation method for linear integral and integro-differential equations of the third kind

## ABSTRACT

In this note, convex Homotopy perturbation method (HPM) is presented for the approximate solution of the linear Fredholm-Volterra integral and integro-differential equation. Convergence and rate of convergence of the HPM are proved for both equations. Five numerical examples are provided to verify the validity and accuracy of the proposed method. Example reveals that HPM is very accurate and simple to implement for integral and integrodifferential equations.