

# **A Comparison between Solving of Two-Dimensional Nonlinear Fredholm Integral Equations of the Second Kind by the Optimal Homotopy Asymptotic Method and Homotopy Perturbation Method**

**ABSTRACT.** In this article, we present the optimal homotopy asymptotic method (OHAM) and homotopy perturbation method (HPM) for solving 2-dimensional nonlinear Fredholm integral equations of the second kind. A comparison is made between these methods to solve 2-dimensional nonlinear Fredholm integral equations of the second kind. The results show that the presented methods are very powerful and simple techniques in solving 2-dimensional nonlinear Fredholm integral equations of the second kind.

**Key words:** 2-dimensional nonlinear Fredholm integral equations of the second kind, homotopy asymptotic method, homotopy perturbation method.

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