



# Solving Laplace Equation within Local Fractional Operators by Using Local Fractional Differential Transform and Laplace Variational Iteration Methods

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**Abstract:** In this paper, we utilize the local fractional differential transform (LFDTM) and Laplace variational iteration methods (LFLVIM) to obtain approximate solutions for the Laplace equation (LE) within local fractional derivative operators (LFDOs). The efficiency of the considered methods is illustrated by some examples. The results obtained by the LFDTM are compared with the results obtained by the LFLVIM. We demonstrate that the two approaches are very effective and convenient for finding the approximate analytical solutions of PDEs with LFDOs.

**Keywords:** *Laplace equation; local fractional differential transform method; local fractional Laplace variational iteration method; approximate solutions.*

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