

## Annular Hyperbolic Profile Fins with Variable Thermal Conductivity Using Laplace Adomian Transform and Double Decomposition Methods

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**Abstract :** In this article, the Laplace Adomian transform method (LADM) and double decomposition method (DDM) are used to solve the annular hyperbolic profile fins with variable thermal conductivity. As the thermal conductivity parameter  $\varepsilon$  is relatively large, the numerical solution using DDM become incorrect. Moreover, when the terms of DDM are more than seven, the numerical solution using DDM is very complicated. However, the present method can be easily calculated as terms are over seven and has more precisely numerical solutions. As the thermal conductivity parameter  $\varepsilon$  is relatively large, LADM also has better accuracy than DDM.

**Keywords :** fins, thermal conductivity, Laplace transform, Adomian, nonlinear

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