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Nonlinear Heat Transfer in a Spiral Fin with a Period Base Temperature

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Abstract : In this study, the problem of a spiral fin with a period base temperature is analyzed by using the Adomian decomposition method. The Adomian decomposition method is a useful and practice method to solve the nonlinear energy equation which are associated with the heat radiation. The period base temperature is around a mean value. The results including the temperature distribution and the heat flux from the spiral fin base can be calculated directly. The results also discussed the effects of the dimensionless variables for the temperature variations and the total energy transferred from the spiral fin base.

Keywords : spiral fin, period, adomian decomposition method, nonlinear
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