عنوان مقاله:

Temperature distribution of convective fin with temperature dependent internal heat generation and thermal conductivity using DTM

محل انتشار:

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خلاصه مقاله:

In this study a simple and highly accurate semi -analytical method called the Differential Transformation Method (DTM), is used for solving the nonlinear temperature distribution equation in a longitudinal fin with temperature dependent internal heat generation and thermal conductivity. The problem is solved for two main cases. In the first case, heat generation isassumed variable by fin temperature and in second case both thermal conductivity and heat generation varies with temperature. Results are presented for the temperature distribution for a range of values of parameters appearing in the mathematical formulation (e.g. N, eG, and G Results reveal that DTM is very effective and convenient. Also it is found that this method can achieve more suitable results in comparison to Numerical methods

کلمات کلیدی:

DTM, Analytical solution Heat generation, Temperature-dependent thermal conductivity Convective fin

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