

عنوان مقاله:

Investigation of the Effects of Non-linear and Non-homogeneous Non-Fourier Heat Conduction Equations on Temperature Distribution in a Semi-infinite Body

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خلاصه مقاله:

In this paper, the non-Fourier heat conduction in a semi-infinite body was examined. The heat wave non-Fourier heat conduction model was used for thermal analysis. Thermal conductivity was assumed temperature-dependent which resulted in a non-linear equation. The heat source was also considered temperature-dependent which resulted in a non-homogeneous equation. The Mac-Cormack predictor-corrector numerical method was employed to solve the equations. It was concluded that, the non-linear analysis of the non-Fourier heat transfer problems is of great importance. Also, the case which assumed a temperature-dependent heat source had a considerable difference with the case in which a constant heat source was assumed.

کلمات کلیدی:

Heat Conduction, Mac-Cormack Numerical Method, Non-Fourier, Non-Homogeneous Equation, Non-Linear Equation

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