



Algebraically explicit analytical solution of three-dimensional hyperbolic heat conduction equation

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In this paper, the three-dimensional hyperbolic effect subjected to a cosine heat flux boundary condition is carried out. Equations in rectangular coordinates are solved. Analytical solution with method of separation of variables is derived. The main aim of this paper is to obtain some possibly explicit analytical solution of the (1+3)-dimensional hyperbolic heat conduction equation for given initial and boundary condition with method of separation of variables. The temperature layers and profiles for various relaxation times in three different examples are calculated. Also, the reflection of the heat wave in the solid in some examples is shown.

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