Discrete Symmetries Analysis of Burgers Equation with Time Dependent Flux at the Origin

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Abstract:

In this work, we consider the Lie's method of infinitesimal transformation groups and discrete symmetries method for Burgers equation with time dependent flux at the origin. Following the Lie's method of infinitesimal transformation groups we determine the symmetry reductions and similarity solutions of the governing equation. By applying discrete symmetries analysis we have obtained three groups of discrete symmetries which lead to new symmetry reductions and similarity solutions of our problem. The analytical solutions which are obtained using symmetries and discrete symmetries are summarized in table form.

Keywords:

Lie group · discrete symmetries · Burger equation

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