

عنوان مقاله:

Lie symmetries, conservation laws, optimal system and power series solutions of  $(\nu+1)$ -dimensional fractional Zakharov-Kuznetsov equation

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خلاصه مقاله:

In this paper, the Lie symmetry analysis method is applied to the high dimensional fractional Zakharov-Kuznetsov equation. All Lie symmetries and the corresponding conserved vectors for the equation are obtained. The one-dimensional optimal system is utilized to reduce the aimed equation with Riemann-Liouville fractional derivative to a low-dimensional fractional partial differential equation with Erdelyi-Kober fractional derivative. Then the power series solution of the reduced equation is given. Moreover, some other low dimensional reduced fractional differential equations with Riemann-Liouville fractional derivatives are obtained and can be solved by different methods in the literatures herein.

کلمات کلیدی:

Lie symmetry analysis, fractional Zakharov-Kuznetsov equation, Conservation laws, one-dimensional optimal system, power series solution

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