

# Lie Symmetry Group of the Nonisospectral Kadomtsev-Petviashvili Equation

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The classical symmetry method and the modified Clarkson and Kruskal (C-K) method are used to obtain the Lie symmetry group of a nonisospectral Kadomtsev-Petviashvili (KP) equation. It is shown that the Lie symmetry group obtained via the traditional Lie approach is only a special case of the symmetry groups obtained by the modified C-K method. The discrete group analysis is given to show the relations between the discrete group and parameters in the ansatz. Furthermore, the expressions of the exact finite transformation of the Lie groups via the modified C-K method are much simpler than those obtained via the standard approach.

*Key words:* Nonisospectral KP Equation; Classical Symmetry Method; Lie Symmetry Group; Modified C-K Method.