Multiple Soliton-Like Solutions and Similarity Reductions of a Spherical Kadomtsev-Petviashvili Equation from Plasma Physics

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Abstract: A spherical Kadomtsev-Petviashvili (SKP) equation for dust acoustic or ion-acoustic waves is studied. Similarity reductions of the SKP equation are obtained with the one-parameter Lie group of infinitesimal transformations and Clarkson-Kruskal direct method. The SKP equation is also solved with a generalized tanh function method.

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