

## 量子物理

### (2+1)维AKNS方程的对称约化和新的非行波精确解

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摘要:

利用Lie群方法将(2+1)维AKNS方程约化成(1+1)维非线性偏微分方程。对约化方程应用扩展同宿测试法获得了AKNS方程的一些新的非行波精确解, 这些结果丰富了该方程的可积性内涵及(2+1)维非线性波传播的动力学行为。

关键词: 非线性方程 (2+1)维AKNS方程 Lie群方法 扩展同宿测试法 非行波精确解

### Symmetry reduction and new non-traveling wave solutions of (2+1)-dimensional AKNS equation

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Abstract:

The (2+1)-dimensional AKNS equation was reduced to (1+1)-dimensional nonlinear partial differential equation by applying the Lie group method. As to the reduced equation, some new non-traveling wave exact solutions were obtained with extended homoclinic test approach. These results enrich the connotations of integrability of the equation and dynamical behavior of (2+1)-dimensional nonlinear wave propagation.

Keywords: nonlinear equation (2+1)-dimensional AKNS equation Lie group method extended homoclinic test method non-traveling wave exact solutions

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