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非线性光学

变系数（2+1）维非线性薛定谔方程中奇异结构孤子

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摘要： 基于双线性方法，我们得到 (2 + 1)维变非线性系数的薛定谔方程的一个孤子解。数值模拟与解析解的一致性表明，在圆柱对称的坐标系中，这种克尔型孤子形成了一类新的涡流型的空间孤子簇。我们发现这些孤子的传输是稳定的,独立于传输距离。

关键词： 非线性光学 涡旋孤子 双线性算法 非线性薛定谔方程

Special soliton structures in the (2+1)-dimensional nonlinear Schrodinger equation with variable nonlinearity coefficient

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Abstract: A soliton solution to (2+1)-dimensional nonlinear Schrodinger equation with variable nonlinearity coefficients based on Hirota bilinear Method is gotten. Our results indicate that a new family of vortex solitons can be formed in the Kerr nonlinear media in the cylindrical symmetric geometry. These soliton profiles are stable, independent of propagation distance.

Keywords: nonlinear optics vortex soliton Hirota bilinear method nonlinear Schrodinger equation

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