

## 一类非线性Schrodinger方程的整体解和自相似解

叶耀军(1), 王建平(2)

(1)浙江科技学院数学与信息科学系, 杭州 310023; (2)河南农业大学信息与计算科学系, 郑州 450002

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摘要 对于 $\alpha$ 的某一取值范围,应用广义Strichartz不等式和压缩映射原理研究了初值在弱 $L^p$ 空间中足够小的条件下,非线性Schrodinger方程Cauchy问题整体解和自相似解的存在性.

关键词 [非线性Schrodinger方程](#),[广义Strichartz估计](#),[自相似解](#).

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## The Global Solutions and Self-Similar Solutions for a Class of Nonlinear Schrodinger Equations

YE Yaojun(1), WANG Jianping(2)

(1)Department of Mathematics and Information Science, Zhejiang University of Science and Technology, Hangzhou 310023; (2)Department of Information and Computational Science, Henan Agricultural University, Zhengzhou 450002

**Abstract** The global Cauchy problem of nonlinear Schrodinger equations is considered by using generalized Strichartz inequalities and the contraction mapping principle. Under some restrictions on parameter  $\alpha$ , if the initial value is sufficiently small in some weak  $L^p$  space, then there exists a global solution. Moreover, the global unique existence of self-similar solutions is obtained in weak  $L^p$  space for the small initial value with self-similar structure.

**Key words** [Nonlinear Schrodinger equation](#) [generalized Strichartz estimates](#) [self-similar solutions](#).

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