Local and global existence in L^{p} for the inhomogeneous nonlinear Schrödinger equation

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Abstract

This paper investigates the local and global existence for the inhomogeneous nonlinear Schrödinger equation with the nonlinearity λ|x|^{-b}|u|^{β}u. It is show that a global solution exists in the mass-subcritical for large data in the spaces L^{p}, p < 2 under some suitable conditions on b,β and p. The solution is established using a data-decomposition argument, two kinds of generalized Strichartz estimates in Lorentz spaces and a interpolation theorem.

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