The orbital stability of standing-wave solutions to the non-linear Schrödinger equation

\[ i\partial_t \varphi + \Delta \varphi + |\varphi|^{p-1}\varphi = 0. \]

has been proved by T. Cazenhave and P. L. Lions in 1983. The proof uses the Concentration-Compactness Theorem of P. L. Lions and relies on the fact that there is only one positive and radially symmetric solution to

\[ \Delta u + u^p = \omega u, \quad u \in H^1_r(\mathbb{R}^n), \quad u > 0. \]

for fixed \( \omega \). We wish to investigate to what extent such property is preserved when the pure power non-linearity is replaced by a general non-linearity \( f \). We show that, at least when \( \lambda \) is suitably small, there are only finitely many of such solutions. (Received September 14, 2014)