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

\[ i\partial_t \varphi(t, x) + \Delta_x \varphi(t, x) - G(\varphi(t, x)) = 0 \]

follows from properties of the set of minima of the functional

\[ E(u) = \frac{1}{2} \int_{\mathbb{R}^n} |\nabla u(x)|^2 dx + \int_{\mathbb{R}^n} G(u(x)) dx \]

on the constraint \( S = \{ u \in H^1_{r,+}(\mathbb{R}^n) \mid \| u \|_{L^2}^2 = 1 \} \). The functions \( H^1_{r,+}(\mathbb{R}^n) \) are radially symmetric (with respect to the origin), \( H^1 \) and positive. Stability holds when this set is finite. It is known from Kwong (ARMA, 1989) and Berestycki and Lions (ARMA 1983) that if \( G(s) = -a|s|^p \), there is exactly one minimum. We show that this uniqueness holds for combined power-type non-linearities, \( G(s) = -a|s|^p + b|s|^q \) and spatial dimension \( n = 1 \). We also provide a condition on \( G \) ensuring that minima of \( E \) on \( S \) are non-degenerate. As a consequence, there are only finitely many of them. (Received September 20, 2016)