Wei, Juncheng (PRC-CHHK); Yan, Shusen (5-NENG-MSC)

Infinitely many positive solutions for the nonlinear Schrödinger equations in \( \mathbb{R}^N \).

(English summary)


Summary: “We consider the following nonlinear problem in \( \mathbb{R}^N \):

\[
-\Delta u + V(|y|)u = u^p, \quad u > 0 \text{ in } \mathbb{R}^N, \quad u \in H^1(\mathbb{R}^N),
\]

where \( V(r) \) is a positive function, \( 1 < p < (N+2)/(N-2) \). We show that if \( V(r) \) satisfies

\[
V(r) = V_0 + \frac{a}{r^m} + O \left( \frac{1}{r^{m+\theta}} \right), \quad \text{as } r \to +\infty,
\]

where \( a > 0, m > 1, \theta > 0, \) and \( V_0 > 0 \) are some constants, then (1) has infinitely many non-radial positive solutions, whose energy can be made arbitrarily large.”

Stephen B. Robinson

References

11. Dancer, E.N., Yan, S.: On the existence of multipeak solutions for nonlinear field


Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

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