

SEMINÁRIO DE ANÁLISE

A positive bound state for an asymptotically linear or superlinear Schrödinger equation in exterior domains

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Abstract. We establish the existence of a positive solution for semilinear elliptic equation in exterior domains

$$-\Delta u + V(x)u = f(u), \quad \text{in } \Omega \subseteq \mathbb{R}^N \quad (P_V)$$

where $N \geq 2$, $\mathbb{R}^N \setminus \Omega$ is bounded but there is no restriction on its size, nor any symmetry assumption. The nonlinear term f is a non homogeneous, asymptotically linear or superlinear function at infinity. Moreover, the potential V is a positive function, not necessarily symmetric. The existence of a solution is established in situations where this problem does not have a ground state.

Referências

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