Multi-bump solutions for a Schrödinger equation with prescribed L^2-norm via a fixed point approach

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In this talk, we will present a study on the existence of multi-bump solutions for a class of nonhomogeneous Schrödinger equations with prescribed L^2-norm in $\mathbb{R}^N$ ($N \geq 2$). The nonlinear term is assumed to be continuous, satisfying exponential critical growth for $N = 2$ and subcritical growth for $N \geq 3$. Instead of using variational methods, we adopt a modified fixed point theorem to investigate the problem. In particular, for $\lambda > 0$ sufficiently large, this approach establishes the existence of at least $2^k - 1$ positive solutions.

References

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