

On the influence of the middle range of the nonlinearity in the multiplicity of ground states of a semilinear elliptic problem

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Given k in N , we define a class of continuous piecewise nonlinearities f having abrupt but controlled magnitude changes so that the semilinear problem

$$\Delta u + f(u) = 0; x \text{ in } R^N, N > 2$$

has at least k radially symmetric positive solutions.

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