

Nonradial solutions of nonlinear scalar field equations

Jarosław Mederski

*Institute of Mathematics,
Polish Academy of Sciences,
jmederski@impan.pl*

We look for nonradial solutions of the following nonlinear scalar field equation

$$\begin{cases} -\Delta u = g(u), & u \in H^1(\mathbb{R}^N), \quad N \geq 3, \end{cases}$$

with a nonlinearity g satisfying the general assumptions due to Berestycki and Lions. We present how to build a critical point theory on the Pohozaev manifold associated with the problem, which is only a topological manifold. In particular, we find nonradial solutions under some additional restrictions imposed on the dimension N or the nonlinearity g .