The nonlinear Schrödinger equation in the half-space

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Abstract

We consider the (stationary) nonlinear Schrödinger equation in the half-space with non-homogeneous constant Dirichlet boundary conditions. We analyse the existence, non-existence, and multiplicity of smooth bounded positive solutions. We show that the existence and multiplicity depend in a striking way on the boundary value and also on the dimension. The talk is based on a joint work with Tobias Weth.