

Quantitative symmetry breaking of groundstates for a class of weighted Emden-Fowler equations

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Abstract. I will talk about a joint work with Ederson Moreira dos Santos, where we recently prove that symmetry breaking occurs in dimensions $N \geq 3$ for the groundstate solutions to a class of Emden-Fowler equations on the unit ball, with Dirichlet boundary conditions. We show that this phenomenon occurs for large values of a certain exponent for a radial weight function appearing in the equation. The problem reads as a possibly large perturbation of the classical Hénon equation. In particular we consider a weight function having a spherical shell of zeroes centred at the origin and of radius R . A quantitative condition on R for this phenomenon to occur is given by means of universal constants, such as the best constant for the subcritical Sobolev embedding.