## Symmetry results for solutions of semilinear elliptic equations

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Abstract. A classical result due to Gidas, Ni and Nirenberg shows that positive solutions of semilinear elliptic equations in a ball, satisfying zero Dirichlet boundary conditions are radial. However when the solution changes sign, or the domain is not convex this theorem does not apply and indeed the radial symmetry fails as can be shown with several examples. However a partial symmetry is expected to be preserved, at least for certain kind of solutions, like minimizers or low Morse index solutions. We will show results in this direction, assuming some convexity properties of the nonlinear term. The domains that we consider are radially symmetric but can be nonconvex or unbounded. In the case of unbounded domains some nonexistence results of sign changing solutions is deduced.