## Existence and Non-existence of Ground State Solutions for Elliptic Equations with a Convection Term

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Abstract. We deal with existence of positive solutions u decaying to zero at infinity, for a class of equations of Lane-Emden-Fowler type involving a gradient term. One of the main points is that the differential equation contains a semilinear term  $\sigma(u)$  where  $\sigma : (0, \infty) \to (0, \infty)$  is a smooth function which can be both unbounded at infinity and singular at zero. Our technique explores symmetry arguments as well as lower and upper solutions. This is a joint work with Jose Valdo Gonçalves.