

# Some remarks on biharmonic elliptic problems with positive, increasing and convex nonlinearities

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## Abstract

We study the existence of positive solutions for a fourth order semilinear elliptic equation under Navier boundary conditions with positive, increasing and convex source term. Both bounded and unbounded solutions are considered. When compared with second order equations, several differences and difficulties arise. In order to overcome these difficulties new ideas are needed. But still, in some cases we are able to extend only partially the well-known results for second order equations. The theoretical and numerical study of radial solutions in the ball also reveal some new phenomena, not available for the second order equations. These phenomena suggest a number of intriguing unsolved problems, which we quote in the final section.

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