Seminário de Análise

On the extremal parameter of a partial differential equation with concave-convex nonlinearity

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Abstract. We study a p-Laplacian equation involving a parameter λ and a concave-convex nonlinearity containing a weight which can change sign. By using the Nehari manifold and the fibering method of Pohozaev, we show the existence of two positive solutions on some interval $(0, \lambda^* + \varepsilon)$, where λ^* can be characterised variationally.

References

[1] A. Ambrosetti, H. Brezis, G. Cerami, Combined effects of concave and convex nonlinearities in some elliptic problems, J. Funct. Anal. 122 (2) (1994) 519–543.

[2] J. P. García Azorero, I. Peral Alonso, J. J. Manfredi, Sobolev versus Hölder local minimizers and global multiplicity for some quasilinear elliptic equations, Commun. Contemp. Math. 2 (3) (2000) 385–404.

[3] K. J. Brown, T.-F. Wu, A fibering map approach to a semilinear elliptic boundary value problem, Electron. J. Differential Equations (2007) No. 69, 9.

[4] K. Silva, A. Macedo, Local minimizers over the Nehari manifold for a class of concave-convex problems with sign changing nonlinearity, Journal of Differential Equations. 265 (2018) 1894–1921