

1077-35-515

Dumitru Motreanu* (motreanu@univ-perp.fr), Department of Mathematics, University of Perpignan, 66860 Perpignan, France. *Nonlinear parametric Neumann problems with bifurcation and control properties.*

For a nonlinear Neumann problem driven by the p -Laplacian and depending on a positive real parameter, it is shown the existence of a value of the parameter such that for smaller numbers the corresponding problem has at least two positive solutions, whereas for bigger ones the corresponding problem has no positive solution. The reaction term in the equation has a $(p-1)$ -superlinear growth near $+\infty$ and $(p-1)$ -sublinear growth near 0 , so our result covers combined effects of concave and convex nonlinearities. An evolutionary version of this bifurcation property is given in terms of certain nonlinear control systems. (Received September 06, 2011)