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Nonhomogeneous Dirichlet Problems for the $p-$Laplacian

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This talk is mainly concerned with the existence, nonexistence and multiplicity of positive solutions for the problem

$$\begin{cases} -\Delta_p u = \lambda u^{q-1} & \text{in} \quad \Omega, \\ u = \varphi & \text{on} \quad \partial\Omega. \end{cases} \tag{0.1}$$

For $p = 2, q = p^*$ and $\varphi = 0$, this is the well-known Pohozaev equation, which has lead to a very large number of works dealing with criticality. Our purpose here is to study problem (0.1) in the case of the $p-$Laplacian with a nonzero boundary data φ.

(Joint work with D. de Figueiredo and P. Ubilla)

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