998-35-172 **Mythily Ramaswamy** (mythily@math.tifrbng.res.in), TATA Institute for Fundamental Research, IIsc Campus, 560012 Bangalore, India, and **Ratnasingham Shivaji*** (shivaji@ra.msstate.edu), Department of Mathematics, Mississippi State University, Mississippi State, MS 39762. *Multiple Positive Solutions for Classes of p-Laplacian Equations.*

We study positive $C^1(\bar{\Omega})$ solutions to classes of boundary value problems of the form

$$\begin{aligned} -\Delta_p u &= \lambda f(u) \text{ in } \Omega \\ u &= 0 \text{ on } \partial\Omega \end{aligned}$$

where Δ_p denotes the p-Laplacian operator defined by $\Delta_p z := \text{div}(|\nabla z|^{p-2}\nabla z)$; $p > 1$, $\lambda > 0$ is a parameter and Ω is a bounded domain in R^N; $N \geq 2$ with $\partial\Omega$ of class C^2 and connected. (If $N = 1$, we assume that Ω is a bounded open interval.) In particular, we establish existence of three positive solutions for classes of nondecreasing, p-sublinear functions f belonging to $C^1([0,\infty))$. Our proofs are based on sub-super solution techniques. (Received February 24, 2004)