1067-35-171 **Eunkyung Ko*** (ek94@msstate.edu), 319 N.Jackson st 1A, Starkville, MS 39759, and **Eunkyoung Lee** (eunkyoung165@gmail.com) and **R. Shivaji** (shivaji@ra.msstate.edu). *A multiplicity result for a class of infinite positone problems.*

We study positive solutions to the singular boundary value problem

$$\begin{cases} -\Delta_p u = \lambda \frac{f(u)}{u^\beta} & \text{in } \Omega, \\ \quad u = 0 & \text{on } \partial\Omega, \end{cases}$$

where $\Delta_p u = \text{div}\,(|\nabla u|^{p-2}\nabla u)$, $p > 1, \lambda > 0, \beta \in (0,1)$ and Ω is a bounded domain in $\mathbb{R}^N$, $N \geq 1$. Here $f : [0,\infty) \to (0,\infty)$ is a continuous nondecreasing function such that $\lim_{u\to\infty} \frac{f(u)}{u^{\beta+p-1}} = 0$. We establish the existence of multiple positive solutions for certain range of λ when f satisfies certain additional assumptions. A simple model that will satisfy our hypotheses is $f(u) = e^{\frac{\alpha u}{\alpha+u}}$ for $\alpha \gg 1$. We also extend our results to classes of systems when the nonlinearities satisfy a combined sublinear condition at infinity. We prove our results by the method of sub-super solutions. (Received July 28, 2010)