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Maya Chhetri*, maya@uncg.edu, and **Petr Girg**. *Existence of Positive Solutions For a Class of Semipositone Systems with Exponential Growth in R^2 .*

We will consider an elliptic system of the form

$$\left. \begin{array}{l} -\Delta u = \lambda f(v) \quad \text{in } \Omega \\ -\Delta v = \lambda g(u) \quad \text{in } \Omega \\ u = 0 = v \quad \text{on } \partial\Omega, \end{array} \right\}$$

where $\lambda > 0$ is a parameter and Ω is a convex bounded domain in R^2 with smooth boundary $\partial\Omega$. The nonlinearities $f, g : [0, \infty) \rightarrow R$ are C^1 functions that are superlinear at infinity, bounded above by exponential functions and satisfy $f(0) < 0$ and $g(0) < 0$. We will discuss the existence of positive solution for λ small. (Received September 21, 2011)