1116-35-1894 **Maya Chhetri***, Department of Mathematics and Statistics, UNC Greensboro, Greensboro, NC 27402, and **Petr Girg**. *Elliptic systems with exponential growth in dimension two.*

We consider an elliptic system of the form

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

where $\lambda \in \mathbb{R}$ is the bifurcation parameter and $\Omega \subset \mathbb{R}^2$ is a bounded, convex domain with smooth boundary $\partial\Omega$. The nonlinearities f, $g : \mathbb{R} \to (0, \infty)$ are non-decreasing Lipschitz continuous functions that depend exponentially on v and u, respectively. We discuss the existence of positive solution for $\lambda > 0$ small using bifurcation theory. (Received September 21, 2015)