

1106-35-1916

**F B Petronella\*** (frank\_petronella@baylor.edu), **Robert DeYeso** (robldeye@ut.utm.edu), **Joshua Barrow** (joshuabarrow@southern.edu) and **Lingju Kong**. *Uniqueness and dependence of positive solutions*] *Positive radially symmetric solution for a system of quasilinear biharmonic equations in the plane.*

We study the boundary value system for the two-dimensional quasilinear biharmonic equations

$$\begin{cases} \Delta(|\Delta u_i|^{p-2}\Delta u_i) = \lambda_i w_i(x) f_i(u_1, \dots, u_m), & x \in B_1, \\ u_i = \Delta u_i = 0, & x \in \partial B_1, \quad i = 1, \dots, m, \end{cases}$$

where  $B_1 = \{x \in \mathbb{R}^2 : |x| < 1\}$ . Under some suitable conditions on  $w_i$  and  $f_i$ , we discuss the existence, uniqueness, and dependence of positive radially symmetric solutions on the parameters  $\lambda_1, \dots, \lambda_m$ . Moreover, two sequences are constructed so that they converge uniformly to the unique solution of the problem. An application to a special problem is also presented.

(Received September 15, 2014)