1067-35-1607 **Justin L Taylor*** (`jtaylor2@ms.uky.edu`), 906 Patterson Office Tower, University of Kentucky, Lexington, KY 40506-0027. *Convergence of Eigenvalues for Elliptic Systems on Perturbed Domains with Low Regularity.*

We consider the eigenvalues of an elliptic operator

$$(Lu)^\beta = -\frac{\partial}{\partial x_j}\left(a_{ij}^{\alpha\beta}\frac{\partial u^\alpha}{\partial x_i}\right) \qquad \beta = 1, ..., m$$

where $u = (u^1, ..., u^m)^t$ is a vector valued function and $a^{\alpha\beta}(x)$ are $(n \times n)$ matrices whose elements $a_{ij}^{\alpha\beta}(x)$ are uniformly bounded measurable real-valued functions such that

$$a_{ij}^{\alpha\beta}(x) = a_{ji}^{\beta\alpha}(x)$$

for any combination of $\alpha, \beta, i$, and $j$. We considertwo non-empty, open, disjoint, and bounded sets, $\Omega$ and $\widetilde{\Omega}$ in $\mathbb{R}^n$ with low regularity, and add a set $T_\varepsilon$ of small measure to form the domain $\Omega_\varepsilon$. Then we show that as $\varepsilon \to 0^+$, the Dirichlet eigenvalues corresponding to the family of domains $\{\Omega_\varepsilon\}_{\varepsilon>0}$ converge to the Dirichlet eigenvalues corresponding to $\Omega_0 = \Omega \cup \widetilde{\Omega}$. (Received September 21, 2010)