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Katharine Ott* (kott@ms.uky.edu), Department of Mathematics, University of Kentucky, 719 Patterson Office Tower, Lexington, KY 40506, and **Irinia Mitrea** and **Warwick Tucker**. *The regularity problem for the Lamé system of elastostatics on curvilinear polygons in two dimensions*. Preliminary report.

We establish sharp well-posedness results for the regularity problem for the Lamé system of elastostatics in the class of curvilinear polygons in two dimensions. The key technical ingredient is obtaining invertibility properties for the boundary version of the single layer potential operator S associated with the Lamé system acting from $L^p(\partial\Omega)$ onto $L_1^p(\partial\Omega)$, $1 < p < \infty$, whenever Ω is an infinite sector in two dimension of aperture $\theta \in (0, 2\pi)$. Our approach relies on Mellin transform techniques employed to analyze the spectrum of the operator $\partial_\tau S$ on $L^p(\partial\Omega)$, $1 < p < \infty$. (Received September 11, 2008)