John Georges, David Mauro and Yan Wang*, Box 150971, Millsaps College, 1701 N State St, Jackson, MS 39210-0001. Some results on $\lambda_x$-invertible graphs.

The recent work of Griggs and Jin on distance-constrained graph labelings has prompted the consideration of real number labelings. For graph $G$ and non-negative real number $x$, an $L_x$-labeling of $G$ satisfies the conditions that labels of adjacent vertices differ by at least $x$ and labels of vertices distance two apart differ by at least one; for fixed value of $x$, the minimum span of all $L_x$-labelings of $G$ is denoted $\lambda_x(G)$. In this paper we introduce the notion of $\lambda_x$-invertible graphs: for $x > 0$, $G$ is said to be $\lambda_x$-invertible if and only if $\lambda_x(G) = x\lambda_{1/x}(G^c)$. We investigate the properties of $\lambda_x$-invertible graphs and identify several classes of graphs with $\lambda_x$-invertibility including Kneser graphs, the line graphs of complete multipartite graphs, and a subfamily of self-complementary graphs. (Received September 01, 2008)