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Kiran Chilakamarri, Nathaniel Dean and Cong X Kang* (kangc@tamug.edu), 200 Seawolf Parkway, Galveston, TX 77554, and **Eunjeong Yi**. *Iteration index of a zero forcing set in a graph*. Preliminary report.

Let each vertex of a graph $G = (V(G), E(G))$ be given one of two colors, say, “black” and “white”. Let Z denote the (initial) set of black vertices of G . The *color-change rule* converts the color of a vertex from white to black if the white vertex is the only white neighbor of a black vertex. The set Z is said to be a *zero forcing set* of G if all vertices of G will be turned black after finitely many applications of the color-change rule. The *zero-forcing number* of G is the minimum of $|Z|$ over all zero forcing sets $Z \subseteq V(G)$. Zero forcing parameters have been studied and applied to the minimum rank problem for graphs in numerous articles. Now, define *the iteration index* of a zero forcing set of a graph G to be the number of (global) applications of the color change rule required to turn all vertices of G black. We will, in this talk, present some basic properties of the iteration index and discuss some preliminary results on certain graphs. (Received September 20, 2010)