1125-05-2671 **Daniela Ferrero*** (`dferrero@txstate.edu`), Department of Mathematics, San Marcos, TX 78666, and **Leslie Hogben**, **Franklin H. J. Kenter** and **Michael Young**. *The relationship between k-forcing and k-power domination.*

Let $G = (V, E)$ be a graph and k a positive integer. For a set $S \subseteq V$, recursively define a family of sets, $S^{(i,k)}$, $i \geq 0$ by $S^{(0,k)} = S$, $S^{(1,k)} = N[S]$, and for each $i \geq 1$, $S^{(i+1,k)} = S^{(i,k)} \cup \{w : \exists v \in S^{i,k}$ such that $|N(v) \setminus S^{i,k}| \leq k$ and $w \in N(v) \setminus S^{i,k}\}$. The set S is a *k-power dominating set* of a graph G if there is an integer ℓ such that $S^{[\ell,k]} = V$ and the minimum integer ℓ such that $S^{(\ell,k)} = V$ is the *k-power propagation time* for S in G.

Analogously, associate with S another family of sets, $B^{(i,k)}$, $i \geq 0$ defined by $B = B^{(0,k)}$ and for each $i \geq 0$: $B^{(i+1,k)} = \{w : \exists v \in B^{(i,k)}$, such that $|N(v) \setminus B^{(i,k)})| \leq k$ and $w \in N(v) \setminus B^{(i,k)}\}$. The set S is a *k-forcing* set of G if there is an integer ℓ such that $S^{(\ell,k)} = V$ and the minimum integer ℓ such that $S^{(\ell,k)} = V$ is the *k-propagation time* for S in G.

We show how methods and techniques used to study k-power domination transfer to the study of k-forcing and vice versa. (Received September 20, 2016)