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Ryan R. Martin, Brendon Stanton and Shanise Walker* (shanise1@iastate.edu), 443
Carver Hall, 411 Morrill Rd, Ames, IA 50011. *A new lower bound for a vertex-identifying code in general graphs.*

Let $N[v]$ denote the closed neighborhood of a vertex v . For a finite graph G , a vertex-identifying code in G is a subset $C \subset V(G)$, with the property that $N[u] \cap C \neq N[v] \cap C$, for all distinct $u, v \in V(G)$ and $N[v] \cap C \neq \emptyset$, for all $v \in V(G)$. Karpovsky, Chakrabarty, and Levitin proved that for a graph G on n vertices such that $|N[v]| < \beta$ for all $v \in V(G)$ and C a vertex-identifying code, $|C| \geq \max \left\{ \lceil \log_2(n+1) \rceil, \left\lceil \frac{2n}{\beta+1} \right\rceil \right\}$. We improve upon the lower bounds of Karpovsky, et al. when $e\sqrt{n} < \beta < \frac{n}{2} - \sqrt{\frac{n \ln 2}{2}}$. (Received August 29, 2016)