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Jeong Ok Choi* (jeong.choi@trincoll.edu), 300 Summit Street, Department of Mathematics, Hartford, CT 06106, and **John P. Georges** and **David W. Mauro**. *Classification of Z_2^k -magic graphs*.

Let $G = (V, E)$ be a graph (loopless and not necessarily simple). Let $(A, +)$ be an abelian group with identity 0, and let $A^* = A - \{0\}$. Then an *A-magic labeling of G* is a function ϕ from E into A^* such for some $c \in A$, $\sum_{e \in E(v)} \phi(e) = c$ for every $v \in V$, where $E(v)$ is the set of edges incident to v . If ϕ exists such that $c = 0$, then G is *zero-sum A-magic*. In this talk, the properties of Z_2^k -magic graphs in terms of chromatic index, even edge-coverings, and factorability will be discussed. Also, it will be discussed that for every bridgeless graph G , the minimum k such that G is zero-sum Z_2^k -magic is equal to the minimum number of even subgraphs that cover G , and that $k \leq 3$. Finally, equivalent conditions for graphs of even order with bridges to be Z_2^k -magic for all $k \geq 4$ will be mentioned. This is joint work with John P. Georges and David W. Mauro. (Received September 12, 2010)