1086-05-222 **Matt Tardiff*** (mtardiff@students.stonehill.edu), Department of Mathematics, Stonehill College, Easton, MA 02357, and **Hsin-hao Su** (hsu@stonehill.edu), Department of Mathematics, Stonehill College, Easton, MA 02357. *On Mod(3) Edge-magic Cubic Graphs.*

Let G be a (p, q)-graph in which the edges are labeled by $1, 2, \ldots, q$. The vertex sum for a vertex v is the sum of the labels of the incident edges at v. If the vertex sums are constant, $\pmod k$, where $k > 2$, then G is said to be Mod(k)-edge-magic. When $k = p$, the Mod(p)-edge-magic graph is the edge-magic graph which was introduced by Lee, Seah and Tan in 1992.

When we consider whether a cubic graph is Mod(3)-edge-magic, an old theorem stated "almost all cubic simple graphs are Mod(3)-edge-magic." So, a conjecture, "all cubic simple graphs are Mod(3)-edge-magic" has been around for more than fifteen years and is still not completely solved. While a power theorem, if a cubic graph is Hamiltonian then it is Mod(3)-edge-magic, takes care of most of cubic graphs, in this paper, we investigate non-Hamiltonian graphs which are Mod(3)-edge-magic. (Received August 07, 2012)