1077-05-1837   **Michael Young*** (myoung@iastate.edu), **Leslie Hogben**, **My Huynh**, **Kirill Lazebnik**, **Anna Cepek**, **Travis Peters** and **Minerva Catral**. *Zero Forcing Number and Maximum Nullity of Subdivided Graphs.*

For a simple, undirected graph G the zero forcing number $Z(G)$ is the minimum number of blue vertices initially needed to force all vertices in G blue according to the color change rule. The color change rule states that in a graph where each vertex is colored blue or white, a vertex v can force an adjacent vertex w to be colored blue, if v is blue and w is the only white neighbor of v.

The maximum nullity $M(G)$ of G is the largest possible nullity over all real symmetric matrices whose ijth entry (for $i \neq j$) is nonzero whenever $\{i, j\}$ is an edge in G and is zero otherwise. The minimum rank $mr(G)$ of G is $|G| - M(G)$. It is known that $M(G) \leq Z(G)$ for all G.

The complete subdivision graph $\overset{\circ}{\widetilde{G}}$ is obtained from G by subdividing each edge once. This talk will cover results relevant to $Z(H)$ and $M(H)$ for an edge subdivision graph H of G and to the open question of whether $Z(\overset{\circ}{\widetilde{G}}) = M(\overset{\circ}{\widetilde{G}})$ for all graphs G. (Received September 21, 2011)

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