

1106-11-1887      **Michelle R. DeDeo\*** (mdedeo@unf.edu), 1 UNF Dr., Dept. of Mathematics and Statistics,  
Jacksonville, FL 32224. *Thoughts on the Energy of Ramanujan graphs*. Preliminary report.

Graph energy is a mathematically interesting topic. Although this topic was introduced in the mathematical literature in the 1970s, and has a still older chemical origin, deeper connections to chemistry and graph theory were not developed until recently. Since 2006, when the first extension was put forward, an unexpectedly large number of graph energies appeared. While this work is theoretical, these concepts have made great contributions to fields such as computer networks, chemistry and spectral graph theory.

In particular, whenever a new “energy” was introduced, one of the first tasks was to find bounds for the energy. Generalized bounds have been reported for practically all of the types of graph energies, but these bounds are non-specific. What authors have yet to accomplish is to determine strict graph energy bounds for several important classes of graphs such as Ramanujan graphs. The foundation of this talk is to share ideas regarding the energy of Ramanujan graphs and explore their meaning. (Received September 15, 2014)