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Emily J Evans* (ejevans@mathematics.byu.edu), **Jeffery Humpherys** and **Nathaniel Merrill**. *A Novel Technique for Calculating the Effective Resistance of an Undirected Graph*. Preliminary report.

In this talk we introduce a way of determining the effective resistance of an undirected graph by considering an absorbing Markov chain and using the Drazin inverse. The idea behind our result is to scale the adjacency matrix of the graph to become the transition probability matrix of a Markov chain, and then modify that matrix to become an absorbing Markov chain. We then use the Drazin inverse to obtain the effective resistance of the graph. Not only does our technique correctly recover the effective resistance of an undirected graph, it provides promising new measure to be used in the link predication problem for directed graphs. (Received September 10, 2016)