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**Nathan H Reff\*** (nreff@brockport.edu), The College at Brockport, State University of New York, Brockport, NY 14420. *Oriented Gain Graphs, Line Graphs and Eigenvalues.*

A theory of orientation on gain graphs (voltage graphs) is developed to generalize the notion of orientation on graphs and signed graphs. Using this orientation scheme, the line graph of a gain graph is studied. For a particular family of gain graphs with complex units, matrix properties are established. As with graphs and signed graphs, there is a relationship between the incidence matrix of a complex unit gain graph and the adjacency matrix of the line graph. (Received September 20, 2016)