1056-05-1796   **Nathan H Reff*** (`reff@math.binghamton.edu`), 3125 Burris Rd. Apt. 9, Vestal, NY 13850.
Spectral Properties of Abelian Gain Graphs. Preliminary report.

A gain graph is a graph whose edges are labelled invertibly by elements of a group $\mathfrak{G}$. I extend some fundamental concepts from spectral graph theory to gain graphs for which $\mathfrak{G}$ is abelian. (Received September 22, 2009)