1106-11-125 **Larry J. Gerstein*** (gerstein@math.ucsb.edu), Department of Mathematics, University of California, Santa Barbara, CA 93106-3080. *Integral quadratic forms and graph isomorphism.* Preliminary report.

Let G_1 and G_2 be undirected graphs with adjacency matrices A_1 and A_2. Then G_1 and G_2 are isomorphic if and only if there is a permutation matrix P such that $A_2 = {}^tPA_1P$. On the other hand, if A_1 and A_2 are viewed as the Gram matrices of integral quadratic forms q_1 and q_2, then q_1 and q_2 are equivalent quadratic forms if and only if there is a *unimodular* matrix P such that $A_2 = {}^tPA_1P$. The talk will consider the application of the theory of integral quadratic forms to the graph isomorphism problem. (Received July 23, 2014)