1019-46-115   **Jack Spielberg*** (`jack.spielberg@asu.edu`), Department of Mathematics & Statistics, Arizona State University, P. O. Box 871804, Tempe, AZ 85287-1804. *A dynamical restriction on C^*-algebras of graphs.*

It is known that for any countable abelian group G there is an (irreducible) graph whose C^*-algebra has trivial K_1, and K_0 equal to G. One can arrange that K_1 be a given free abelian group, but graph C^*-algebras are inherently limited to having free K_1. We describe another inherent limitation on the possible K-theory of graph C^*-algebras, imposed by automorphisms of the K-theory. Consider a (countable) abelian group G with subgroup H, and an automorphism f of G having prime order p and leaving H invariant. Then the following two conditions are equivalent:

1. There is a graph E with subgraph F, and an order p automorphism g of E leaving F invariant, such that $C^*(F)$ is a subalgebra of $C^*(E)$, $K_1 = 0$ for both algebras, K_0 induces the containment of H in G, and g defines an (order p) automorphism of $C^*(E)$ that induces f in K-theory.

2. $[(f - id)G] \cap H = (f - id)H$.

In particular, we give simple examples of inclusions of groups for which no such graphs can exist. (Received August 10, 2006)