UNIVERSITY AT ALBANY
State University of New York

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Algebra/Topology Seminar

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An Example from Linear Algebra Related to Topology

Thursday, September 29, 2016
1:15 p.m. in ES-143

Abstract. I want to work through a curious argument showing that the context of linear algebra is too rigid for a specific kind of computation. A better way to put it is this: there are categories of objects defined entirely in terms of free modules over a ring, but the need to compute some of their crucial invariants forces one to abandon familiar free modules and consider non-free modules. This way K-theory is replaced by G-theory in the computation. I will answer several questions. Do we know when the Cartan map between K-theory and G-theory is an equivalence for the group rings in question? (Yes.) Can G-theory use be avoided? (No.) My talk from last week provides topological motivation for these questions but formally is not a prerequisite for this. However, the combination of these answers gives a decent resolution of the mystery from the end of my last talk. This is a bit from joint work with Gunnar Carlsson.