Meeting: 1005, Newark, Delaware, SS 1A, Special Session on Homotopy Theory (in Honor of Donald M. Davis's and Martin Bendersky's 60th Birthdays)

1005-55-55 **Joseph Roitberg*** (roitberg@math.hunter.cuny.edu), Department of Mathematics & Statistics, Hunter College, CUNY, 695 Park Avenue, New York, NY 10021, and **Yael Roitberg** (yroitber@nyit.edu), Department of Mathematics, New York Institute of Technology, Old Westbury, NY 11568. *Revisiting an example of Frank and Kahn.*

Let X be a pointed, finite CW-complex, Aut(X) the group of pointed homotopy classes of self-equivalences of X and Aut*(X) the subgroup consisting of those elements of Aut(X) inducing the identity on all the integral homology groups of X. The classical finiteness theorems of Wilkerson, Sullivan and Dror-Zabrodsky, valid for 1-connected X, fail miserably in general. In an effort to formulate conjectures in the case where X is the wedge sum of a 1-connected, finite CW-complex and a finite collection of 1-spheres, we examine the case W = the wedge sum of a 1-sphere, a 2-sphere and a 3-sphere. In 1977, David Frank and Donald Kahn proved that neither Aut(W) nor Aut*(W) is finitely generated. We prove:

Theorem: (i) Aut*(W) is not nilpotent - nor even locally nilpotent; (ii) Aut*(W) is metabelian; (iii) Aut*(W) is both residually nilpotent and residually finite; (iv) Aut(W) is residually finite. (Received January 22, 2005)