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**Michal J. Kukiela** (mckuk@mat.umk.pl) and **Bernd S W Schroeder\***  
(bernd.schroeder@usm.edu). *Fixed Simplexes of Group Actions on Link Collapsible Simplicial Complexes.*

Once the fixed point property is established for a class of ordered sets, it is natural to ask which properties of the class are inherited by the fixed point sets of order-preserving maps.

A simplicial complex is called link collapsible iff it has one vertex, or, there is a simplicial retraction onto a one-vertex-deleted subcomplex such that the subcomplex as well as the link of the retracted vertex are link collapsible. We prove that, for every ordered set with a link collapsible chain complex, the (topological realization of the) fixed point set of every order-preserving function is contractible. Examples show that this result is near optimal in terms of the property of the fixed point set.

The proof focuses on the fixed simplex sets of group actions on link collapsible simplicial complexes. On one hand, this approach shows that, following the canonical translation from ordered sets to comparability graphs to chain/cliue complexes to their topological realizations, there appears to be a significant change of behavior when we generalize from graphs to simplicial complexes that are not cliue complexes. On the other hand, the generality of the result allows us to confirm Kahn, Saks and Sturtevant's evasiveness conjecture for link collapsible simplicial complexes. (Received August 02, 2020)