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Montanuniversitaet Leoben, 8700 Leoben, Austria. *Symmetry breaking in graphs.*

A coloring of the vertices of a graph  $G$  is called distinguishing if the stabilizer of the coloring in the automorphism group of  $G$  is trivial. Tom Tucker conjectured that, if every automorphism of a connected, locally finite graph moves infinitely many vertices, then there exists a distinguishing 2-coloring, that is, a distinguishing coloring using only two colors. This is known as the Infinite Motion Conjecture. Despite many intriguing partial results, it is still open in general.

This conjecture, its generalizations to uncountable graphs, to groups acting on structures, and to endomorphisms of graphs, has become my favorite group of conjectures.

In this talk I will present such generalizations of the Infinite Motion Conjecture, with emphasis on uncountable graphs. I will also shortly describe some of the methods used to obtain solutions for various classes of graphs. (Received September 14, 2013)