1069-05-73 **John R Stembridge*** (jrs@umich.edu). *A finiteness theorem for W-graphs.* Preliminary report. Let W be a finite Coxeter group. A W-graph is a combinatorial structure that encodes a W-module, or more generally, a module for the associated Iwahori-Hecke algebra. Of special interest are the W-graphs that encode the action of the Hecke algebra on its Kazhdan-Lusztig basis, as well as the action on individual cells. Knowing the W-graph allows easy computation of the Kazhdan-Lusztig polynomials.

One may isolate a few elementary features common to the W-graphs in Kazhdan-Lusztig theory and use these to define a class of "admissible" W-graphs. In this talk, we will explain a surprisingly simple (but non-constructive) proof that there are only finitely many admissible W-cells (i.e., strongly connected W-graphs). (Received January 13, 2011)