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Russ Woodroffe* (russw@math.wustl.edu), Department of Mathematics, Campus Box 1146, Washington University, St. Louis, MO 63130. *Vertex decomposable graphs and obstructions to shellability.*

An obstruction to shellability is a non-shellable complex which has every proper subcomplex shellable. Billera and Myers showed that there is a unique obstruction to shellability in the family of order complexes of posets. Wachs showed that there are an infinite number of obstructions in general simplicial complexes, and conjectured that there is a finite number of any given dimension.

In this talk I will give a graph-theoretic classification of the obstructions to shellability in the family of flag complexes. In particular, there are infinitely many. As time allows, I will also discuss approaches to other related problems. (Received August 28, 2009)