

1030-13-102

Adam Van Tuyl* (avantuy1@sleet.lakeheadu.ca), Dept. of Mathematical Sciences, Lakehead University, Thunder Bay, Ontario P7B 5E1, Canada. *Shellable graphs and sequentially Cohen-Macaulay bipartite graphs.*

Associated to a simple undirected graph G is a simplicial complex Δ_G whose faces correspond to the independent sets of G . We call a graph G shellable if Δ_G is a shellable simplicial complex in the non-pure sense of Björner-Wachs. In this talk I will describe some families of graphs that are shellable. In particular, all chordal graphs are shellable. Furthermore, all the shellable bipartite graphs are classified; they are precisely the sequentially Cohen-Macaulay bipartite graphs. We also give an inductive procedure to build all such shellable bipartite graphs. Because shellable implies that the associated Stanley-Reisner ring is sequentially Cohen-Macaulay, our results complement and extend recent work on the problem of determining when the edge ideal of a graph is (sequentially) Cohen-Macaulay. This is joint work with R. Villarreal. (Received July 24, 2007)