

1057-13-346

Erik Stokes* (estokes@mtu.edu), Department of Mathematical Sciences, Michigan Technological University, Houghton, MI 49931, and **Sonja Petrovic**. *Hierarchical Models, Markov Bases and Stanley-Reisner Ideals*.

Associated to each simplicial complex are two seemingly unrelated objects: a hierarchical model and a Stanley-Reisner ideal. In this talk, we discuss relationships between some invariants of the Stanley-Reisner ideal and the Markov basis of the model. In particular, for certain kinds of complexes (in particular vertex-decomposable complexes) there is a surprising connection between the degrees of the elements of the model's Markov basis and the Betti diagram of the complexes' Stanley-Reisner ideal, which we conjecture holds for all simplicial complexes. (Received January 25, 2010)