

## Jay Schweig (Oklahoma State)

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### Bounding the Homology of a Simplicial Complex

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Abstract for the Combinatorics Seminar (joint with the Geometry/Topology Seminar) 2014 April 8

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One of the most basic questions concerning a simplicial complex  $K$  is the following: How can we combinatorially construct a bound  $i$  such that  $H_j(K)$  vanishes for  $j < i$ ? For any complex  $K$ , the minimal nonfaces of  $K$  form a clutter (or hypergraph). We show how certain combinatorial invariants of this clutter bound the homology of the complex  $K$ , and also how they can be used to study algebraic invariants of  $K$ 's Stanley-Reisner ideal.

This is joint work with Hailong Dao.

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