

1053-13-112

**Sonja Mapes\*** ([smapes@math.duke.edu](mailto:smapes@math.duke.edu)), Mathematics Department, 117 Physics Bldg, Box 90320, Durham, NC 27708. *Finite atomic lattices and their relationship to cellular resolutions.*

The minimal free resolution of a monomial ideal can be expressed entirely in terms of the LCM lattice of the ideal. It has also been shown that given a finite atomic lattice  $L$  with  $n$  atoms one can construct monomial ideals  $M$  with  $n$  generators whose LCM lattice is  $L$ . This talk explores the relationship between these lattices and the cellular resolutions of the associated monomial ideals by examining the parameter space of all such lattices. (Received August 26, 2009)