1156-13-172   **Jonathan L. O'Rourke*** (`jorourk2@tulane.edu`). *Local Cohomology and Degree Complexes of Monomial Ideals.*

Studying the local cohomology modules of quotient rings is an area of increasing interest in recent years. Understanding these modules gives insight into the computational complexity of the ideal. Even in the case of powers of squarefree monomial ideals, little is known about these local cohomology modules. In this case, due to a Hochster-like formula of Takayama, the dimensions of the graded local cohomology modules are encoded in the homology of a simplicial complex called the degree complex. I will introduce the construction of the degree complex of a monomial ideal. I will then present results on how this degree complex can be decomposed when the ideal can be written as powers of a sum or fiber product of squarefree monomial ideals, and how the cohomological information can then be recovered. (Received January 22, 2020)