1092-13-191   **Anton Dochtermann*** (`anton@math.miami.edu`), Department of Mathematics, University of Miami, Coral Gables, FL 33146, and **Fatemeh Mohammadi**. *Cellular resolutions via mapping cones.*

Suppose I is a monomial ideal. One can iteratively obtain a free resolution of I by considering the mapping cone of the map of complexes associated to adding one generator at a time. Herzog and Takayama have shown that this procedure yields a minimal resolution if I has 'linear quotients', in which case the mapping cone in each step cones a Koszul complex onto the previous resolution.

Here we consider cellular realizations of these resolutions. Extending a construction of Mermin we describe a regular CW-complex that supports the resolutions of Herzog and Takayama in the case that I has a 'regular decomposition function'. By varying the choice of chain map we recover other known cellular resolutions, including the 'box of complexes' resolutions of Corso, Nagel, and Reiner and the related 'homomorphism complex' resolutions of Dochtermann and Engström. Other choices yield combinatorially distinct complexes with interesting structure, and suggests a notion of a 'space of cellular resolutions'. (Received August 09, 2013)