



Algebra/Topology Seminar

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ON MONOMIAL RESOLUTIONS SUPPORTED ON POSETS

Thursday, December 3, 2015
1:15 p.m. in ES-143

ABSTRACT. In recent work, Clark and Tchernev introduced the notion of monomial resolution supported on a poset. In this talk, I will review this notion, and the related notion of monomial resolution supported on a CW complex. I will discuss a result of mine that shows that resolutions supported on a CW complex are also supported on the face poset of a CW complex. This relates to the work of Clark and Tchernev, who showed that all resolutions of monomial ideals are supported on posets. I will also discuss a new concept of linearity for monomial ideals, called Betti-linearity, and present a necessary and sufficient condition for a monomial ideal to be Betti-linear. As a consequence, one obtains an explicit canonical description of the minimal free resolutions of Betti-linear ideals. I will give some examples, both of the concept, and of interesting classes of Betti-linear ideals for which my result provides the (previously unknown) minimal free resolution.