

Homology in Simplicial Virtual Resolutions

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Virtual resolutions are a tool, defined relatively recently, adapting standard commutative algebra techniques to study toric varieties. Although still poorly-understood in general, a natural class of examples arises from labeled simplicial complexes, generalizing the well-understood class of simplicial resolutions. In this talk, I describe recent work with Jay Yang studying these simplicial virtual resolutions. In particular, we characterize them in terms of the homology of their subcomplexes, and describe a procedure for detecting portions of the homology which are not “essential” obstructions to freeness.

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