

Generic Cohen-Macaulay Monomial Ideals

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Abstract. Given a simplicial complex, it is easy to construct a generic deformation of its Stanley-Reisner ideal. The main question under investigation in this paper is how to characterize the simplicial complexes such that their Stanley-Reisner ideals have Cohen-Macaulay generic deformations. Algorithms are presented to construct such deformations for matroid complexes, shifted complexes, and tree complexes.

Keywords: monomial ideals, simplicial complexes, Cohen-Macaulay

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