

MONOMIAL COMBINATORICS OF POLYNOMIAL IDEALS

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Ideals in the ring of polynomials $K[x_1, x_2, \dots, x_n]$ define the sets of integer numbers, which are the dimensions of intersections of an ideal and linear spaces generated by some sets of monomials. We consider constructions like Gröbner fan, tropical fan, universal Gröbner bases, maximal binomial ideals, Hilbert schemes and others which are strongly connected with this monomial combinatorics. We describe also the connection kind between these kind of constructions and combinatorics of multidimensional Young diagrams.

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