

Khovanskii bases, Newton-Okounkov polytopes, and tropical geometry of projective varieties

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Abstract

A Newton-Okounkov body is a convex set associated to a choice of full rank discrete valuation on a commutative algebra. I'll give a gentle introduction to the construction of Newton-Okounkov bodies, and explain how algebraic information can be read off their convex geometry. Then I will report on some recent joint work with Kiumars Kaveh which links Newton-Okounkov theory with tropical geometry.

Keywords: valuation on an algebra, convex geometry, tropical geometry.