INSTITUTUL DE MATEMATICA “SIMION STOILOW” AL ACADEMIEI ROMANE

Conferința lunară

Seshadri constants on toric varieties

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Abstract: The Flatness Theorem of Khinchine states that a convex body without lattice points must have lattice width bounded above by a constant which depends only on the dimension. For a polarized algebraic variety (X,L) and a point x in X, Demailly introduced the so called Seshadri constant of L at x, which measures the asymptotic growth of the order of jets at x generated by the powers of L. This invariant is constant if x is a very general point, and called the maximal Seshadri constant of L. In this lecture we will show that if (X,L) is toric, the maximal Seshadri constant of L is proportional to the lattice width of the associated moment polytope. We obtain this way lower bounds for maximal Sehadri constants on toric varieties. We also strengthen the Flatness Theorem as follows: a convex body whose lattice points do not generate the lattice, must have lattice width bounded above by a constant which depends only on the dimension. This is joint work with Atsushi Ito.