

Seminari de Geometria Algebraica 2011/2012 (UB-UPC)

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Arakelov theory of toric varieties

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There is a toric dictionary between the algebro-geometric properties of toric varieties and combinatorial properties of lattice polytopes. This dictionary can be extended to relate the Arakelov theory of toric varieties with convex analysis. In this talk we will explain the basic entries of this dictionary and we will give some applications like criteria for positivity of metrized line bundles on toric varieties, a proof of Moriwaki's generalization of Dirichlet's units theorem for toric varieties and a criterion for the existence of an equivariant Zariski decomposition on toric varieties. The first part (the dictionary) is joint work with M. Sombra and P. Philippon and the second part (the applications) is joint work with A. Moriwaki, M. Sombra and P. Philippon.
