Cohomology of toric line bundles by counting Laurent monomials

Shin-Yao Jow

Department of Mathematics,
National Tsing Hua University,
Taiwan

Abstract. Given a complete toric variety X and a line bundle L on X, it is well-known that one can compute the dimension of the space of global sections of L by counting the number of monomials with weight L in the homogeneous coordinate ring of X. Is there a generalization of this algorithm to higher cohomology of L? In this talk we want to introduce the audience to such an algorithm. We will see that for higher cohomology, instead of the usual monomials, one needs to consider the more general "Laurent monomials", i.e. monomials with possibly negative exponents.