

1114-13-256

Alexander Pavlov* (apavlov@msri.org), 17 Gauss way, Berkeley, CA 94720. *Betti Tables of Maximal Cohen-Macaulay Modules over the Cones of Cubic Curves.*

Graded Betti numbers are classical invariants of finitely generated modules describing the shape of a minimal free resolution. We show that for maximal Cohen-Macaulay modules over a homogeneous coordinate rings of smooth Calabi-Yau varieties X computation of Betti numbers can be reduced to computations of dimensions of certain Hom groups in the bounded derived category $D^b(X)$.

In the simplest case of a smooth elliptic curve embedded into projective plane as a cubic we use our formula to get explicit answers for Betti numbers. In this case we show that there are only four possible shapes of the Betti tables up to a shifts in internal degree, and two possible shapes up to a shift in internal degree and taking syzygies. (Received August 29, 2015)