

Robert Lazarsfeld: **Syzygies of algebraic curves of large degree**

In the mid 1980's, Mark Green and I conjectured that one could read off the gonality of an algebraic curve C from the syzygies among the equations defining any one sufficiently positive embedding of C . About a year ago, Lawrence Ein and I noticed that a small variant of the ideas used by Voisin in her work on canonical curves leads to a very quick proof of this gonality conjecture. More recently, Ein and Yang and I found a partial generalization of the main vanishing involved to smooth projective varieties of all dimensions. I will discuss this circle of ideas. In the unlikely event that time allows, I will explain how these results fit into the larger project of trying to understand the asymptotic behavior of the syzygies of a projective variety as the positivity of the embedding line bundle increases.