

1176-14-182

Michael Kemeny* (michael.kemeny@gmail.com). *The Rank of Syzygies*.

I will explain a notion of rank for the relations amongst the equations of a projective variety. This notion generalizes the classical notion of rank of a quadric and I will try to convince you that it is just as interesting! I will then turn to the case of curves and explain a result telling us that, for a general canonical curve, all syzygies are linear combinations of syzygies of minimal rank. This is a sweeping generalization of old results of Andreotti-Mayer, Harris-Arbarello and Green, which tell us that canonical curves are defined by quadrics of rank four.

As a special case, this perspective gives us a new, and simpler, proof of Green's conjecture for general curves. (Received January 22, 2022)