Gábor Farkas

Title: Green's Conjecture via Koszul modules

Abstract: Using ideas from geometric group theory we provide a novel approach to Green's Conjecture on syzygies of canonical curves. Via a strong vanishing result for Koszul modules we deduce that a general canonical curve of genus g satisfies Green's Conjecture when the characteristic is zero or at least $\frac{g+2}{2}$. Our results are new in positive characteristic (and answer positively a conjecture of Eisenbud and Schreyer), whereas in characteristic zero they provide a different proof for theorems first obtained in two landmark papers by Voisin. Joint work with Aprodu, Papadima, Raicu and Weyman