
CHRIS FRANCISCO, Oklahoma State University

Hilbert functions with a unique set of graded Betti numbers

Let $S = k[x_1, \dots, x_n]$ be a polynomial ring over a field k . Given the graded Betti numbers for a module S/I , one can compute the Hilbert function of S/I . In the other direction, the Hilbert function imposes constraints on the graded Betti numbers (e.g., the lex ideal provides upper bounds), but in general there are many possible sets of graded Betti numbers for a given Hilbert function. We ask when the Hilbert function uniquely determines the graded Betti numbers for a module with that Hilbert function, giving some infinite families of examples of this behavior based on work of Evans and Richert.