

On secant varieties to algebraic curves

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Given a smooth complete curve C in a projective space \mathbb{P} over the complex numbers, for every positive integer k , the k -secant variety is the closure of the union of all k dimensional subspaces in \mathbb{P} spanned by $k + 1$ distinct points on C . When the degree of C is large enough, we show that this secant variety does not contain any linear subspace of dimension bigger than k . Our proof relies on new divisibility properties of binomial coefficients. A stronger result was obtained by Claire Voisin, using deformation arguments.