

Abstract

Let f be a homogenous polynomial with complex coefficients. Let $M(f)$ denotes the corresponding Milnor algebra, and $V(f)$ the hypersurface defined by the equation $f = 0$ in the complex projective space. The algebra $M(f)$ is a graded \mathbb{C} -algebra. The aim of this Thesis is to determine the Poincaré series of the Milnor algebra $M(f)$ in terms of the geometry of the hypersurface $V(f)$. The result is classically known for the case when $V(f)$ is smooth. The goal of this research is to discuss the case when $V(f)$ has only isolated singularities. The main new results are Theorem 1.6.4 and Theorem 3.0.2.