Distractions and Generic Initial Ideals

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Abstract

Given a homogeneous ideal I in a polynomial ring S over a field k we construct, with respect to a given monomial ordering, a monomial ideal of S associated to I denoted by D-gin(I). This ideal is constructed by iteratively computing initial ideals and distractions and is strongly stable in any characteristic. This construction has many properties analogous to the generic initial ideal of I but it has better combinatorial properties than gin(I) when $\text{char}(k) = p$.

Keywords: polynomial ring, homogeneous ideal, monomial ideal.