Discriminants of hypersurfaces with prescribed ordinary singularities

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Abstract

Let h be the generic form of a hypersurface in projective n-space with at most n + 1 isolated ordinary singularities in general position. Using weight properties of the coefficients of h, we will present a formula relating the component of lowest weight of the classical discriminant of a perturbation of the form h + tg (where t is a new variable and g is a general form) to the sparse discriminant of h. The proof of this formula also provides an alternative approach to sparse resultants and discriminants in our specific context, which we will discuss. This is joint work with Thomas Dedieu.

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