

Test Ideals of Non-principal Ideals

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Abstract

Given an ideal I of a ring R of characteristic $p > 0$ and a rational number $t > 0$, the test ideal $\tau(R, I^t)$ measures the singularities of both $\text{Spec}(R)$ and $V(I)$. We have had effective tools to compute the test ideal when I is principal for some time, but in the non-principal case we did not know how to tell when the algorithm terminated. In this talk I will discuss joint work with Kevin Tucker which lets us compute test ideals for any I . If time permits, additional applications of these methods will be discussed.

Keywords: ideal, ring, spectrum of a ring.