

Algebraic invariants of singularities

Abstract:

An (algebraic) singularity is a point on an algebraic variety that lacks a well-defined tangent space. One way to study a singularity is by means of a resolution, that is, a recipe to reconstruct the singularity from algebraic manifolds via contracting submanifolds. Many important invariants of a singularity – for example its cohomology, or its Hodge numbers – can be computed using a resolution. On the other hand, important algebraic invariants (for example algebraic K-theory, or algebraic differential forms) cannot be so calculated.

In this talk I will discuss a general approach of measuring the "failure" of the computation, and how this leads to an understanding of such invariants.

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