

Jacobian discrepancies and rational singularities

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Abstract:

In this talk I will introduce the notion of Jacobian discrepancy, an extension to singular varieties of the classical definition of discrepancy for morphisms of smooth varieties. This invariant, very natural from the point of view of jet schemes and arc spaces, leads to a framework in which adjunction and inversion of adjunction hold in full generality. Moreover, they allow us to give explicit formulas measuring the gap between the dualizing sheaf and the Grauert-Riemenschneider canonical sheaf of a normal variety, leading to characterizations of rational singularities in terms of discrepancies.