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Minimal Log Discrepancy of Isolated Singularities and Reeb Orbits.

Let A be an affine variety inside a complex N dimensional vector space which has an isolated singularity at the origin. The intersection of A with a very small sphere turns out to be a manifold called the link of A . The link has a natural hyperplane distribution called a contact structure. If the singularity is numerically \mathbb{Q} -Gorenstein then we can assign an invariant of our singularity called the minimal discrepancy. We relate the minimal discrepancy with the contact geometry of our link. As a result we show that if the link of A is contactomorphic to the link of C^3 and A is normal then A is smooth at 0. This generalizes a Theorem by Mumford in dimension 2.

Presenter: Mr MCLEAN, Mark (Stony Brook)