

Lipschitz geometry of singularities.

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In 1985, T. Mostowski proved a striking result: any complex algebraic family of subsets of $\mathbb{C}^n$ has only finitely many representatives up to bi-Lipschitz homeomorphism, with respect to the outer metric. Later, in 1997, A. Parusiński extended this finiteness phenomenon to the real setting, showing that any subanalytic family of subsets of $\mathbb{R}^n$ also admits only finitely many bi-Lipschitz types. However, these finiteness theorems do not explain how to classify the sets up to bi-Lipschitz homeomorphism. Roughly speaking, they guarantee the existence of discrete invariants that could, in principle, distinguish between the types, but they do not provide explicit classification tools. In this talk, I will introduce the Lipschitz geometry of singularities and present some key results in the field, focusing on the classification of real and complex singularities in low dimensions.

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