On deformation of isolated hypersurface singularities and simultaneous desingularization

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Abstract

We will begin this talk by intorducing the basic notions such as singularity, deformation, desingularization and Milnor number. We will give a brief summary of different notions of equisingularity in families of isolated hypersurface singularities, concentrating on various notions of simultaneous desingularization.

We will then report on joint work with Max Leyton and Hussein Mourtada. The starting point of this work is a 1980 paper by Yujiro Kawamata in which the author claims to relate the existence of simultaneous embedded desingularization in a family to the property of the family being μ^*-constant (where μ denotes the Milnor number and μ^* will be defined in the course of the talk). Inspired by this paper, we formulated two conjectures relating the notions of μ-constant, μ^*-constant and simultaneous embedded resolution. We will discuss our proof of the first of the two conjectures and illustrate it with the example of Briançon – Speder.

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