

Trivialization of analytic map germs for the resolution of singularities

Beatriz Pascual Escudero

Universidad Autónoma de Madrid

The problem of resolution of singularities consists of interpreting an algebraic variety with singular points as the projection of a smooth algebraic variety, and finding out how this projection can be constructed. We mean by projection a birational proper morphism which defines an isomorphism outside of the singular points.

The case of varieties over a field of characteristic zero was solved by H. Hironaka in 1964. As for fields of positive characteristic, the general case is still an open problem, although some results are known for low dimension.

The approach we propose is based on the following idea: any algebraic variety with non-isolated singularities can be written locally as a cartesian product of a subvariety and some other smooth variety. Together with the commutativity of resolution and taking cartesian products, this would allow to reduce the problem of resolution to lower dimension. In order to look at the varieties locally we will use germs.