

Séminaire d'algèbre, topologie et géométrie
Jeudi 7 février à 11h15
Salle I

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Arc spaces and the Minimal model

Attention : heure inhabituelle

This is a panoramic talk about the arc space attached to a singularity and its interaction with the minimal model of Mori of the singular variety.

Given a singularity germ (X, O) of a variety over the complex numbers, an arc is simply a curve parametrization that passes through the origin in time 0. The space of arcs was introduced by J. Nash in the 60's to understand the structure of the singularity in relation with their resolutions or more generally its birational geometry. He conjectured a precise relation in the case of surfaces that was proved by myself and J. Fernandez de Bobadilla in 2011 and a more relax statement for the higher dimensional case. After counterexamples in dimension greater than 3 by Ishii and Kollar in 2005 and in dimension 3 by de Fernex in 2012, some precise positive answer was given in relation with the terminal model with the singularity by de Fernex and Docampo in 2014.

In this talk I will introduce arc spaces, the Nash problem and the minimal model program and sketch what is known about their interactions.