

Dijon, April 28th, 2016.

Profiles near an isolated singular point

Rémi Langevin, Université de Bourgogne-Franche-Comté

(work in progress with J-C. Sifre)

The level $f = \lambda$ of the complex polynomial $f(x, y) = x^3 - y^2$ has, in a small ball B_ϵ of radius ϵ centered at the origin, total curvature close to $3 \cdot$ (universal constant). Moreover this total curvature concentrates in neighborhoods of the three point $\sqrt[3]{\lambda}$ where, after renormalization, the level $f = \lambda$ looks like a parabola, a profile of the curve in that case.

We will show that a similar phenomenon, the apparition of a profile, occurs when studying singular curves with a singular tangent cone, and, quite often when studying surfaces with a singular point and, at that point, a singular tangent cone. I'll add some remarks about isolated singularities of isolated singularities of codimension 1 foliations in \mathbb{C}^2 .