



Seminario de Álgebra, Geometría algebraica y Singularidades
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Newton polygon of the discriminant

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With every germ of a holomorphic mapping $\phi = (f, g): (\mathbb{C}^2, 0) \rightarrow (\mathbb{C}^2, 0)$ one can associate two analytic curves: the jacobian curve given by equation $\frac{\partial f}{\partial x} \frac{\partial g}{\partial y} - \frac{\partial f}{\partial y} \frac{\partial g}{\partial x} = 0$, and the discriminant curve, which is the direct image of the jacobian curve by ϕ .

While the singularities of a jacobian curve are very sensitive to the small perturbation of the mapping ϕ , the discriminant curve is more rigid. We will show two properties:

- the Newton polygon of the discriminant curve depends only on the equisingularity class of the curves $f = 0, g = 0$.
- the curves $f = 0, g = 0$ determine the certain approximation of the equation of the discriminant curve called the initial Newton polynomial.

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