Remarks on the sequence of jumps of Milnor numbers

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The talk is based on the joint work with Maria Michalska.

Give the session name!

Consider a non-degenerated isolated singularity

$$f_0 = \sum_{m\alpha + l\beta \geqslant lm} a_{\alpha\beta} x^\alpha y^\beta$$

such that $a_{l0}a_{0m} \neq 0$ and $l, m > 2$.

Consider an arbitrary holomorphic deformation $(f_s)_{s\in S}$ of f_0, where s is a single parameter defined in a neighborhood S of $0 \in \mathbb{C}$. By the semi-continuity (in the Zariski topology) of Milnor numbers in families of singularities $\mu(f_s)$ is constant for sufficiently small $s \neq 0$ and $\mu(f_s) \leqslant \mu(f_0)$. Denote this constant value by $\mu((f_s))$ and call it generic Milnor number of the deformation (f_s). Let

$$\mathcal{M}(f_0) = (\mu_0(f_0), \mu_1(f_0), \ldots, \mu_k(f_0))$$

be the strictly decreasing sequence of generic Milnor numbers of all possible deformations of f_0. In particular

$$\mu_0(f_0) = \mu(f_0) > \mu_1(f_0) > \ldots > \mu_k(f_0) = 0.$$

We find first few terms of the sequence $\mathcal{M}(f_0)$ in the case of non-degenerate deformations.

References

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