

## Milnor number of weighted-Lê-Yomdin singularities

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### SUMMARY

At the beginning of the seventies, O. Zariski proposed several problems related with the (embedded) topology of a germ of a  $n$ -dimensional hypersurface singularity defined by the zero locus of a germ of a complex analytic function. The second one was roughly stated as “if two analytic hypersurface germs are topologically equivalent then their tangent cones must be homeomorphic and the homeomorphism must respect the topological equisingularity type at any point”. Zariski proved that this is true if  $n = 2$ . In 2005, Fernández de Bobadilla found a counterexample to this problem for a topologically equisingular family if  $n \geq 5$ . In this paper we give counterexamples for  $n = 3$  and 4 (even in a family). Our proof is mainly based on the study of the topology of weighted-Lê-Yomdin surface singularities which are a generalization of the well-known Lê-Yomdin singularities. We obtain a formula for the Milnor number of a weighted-Lê-Yomdin surface singularity and derive an equisingularity criterium for them. (This is joint work with E. Artal Bartolo, J. Fernández de Bobadilla and I. Luengo).

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