Abstract

Hellen Santana

May 2019

Title: Local topology of function-germs with nonisolated singularities

Abstract: The Brasselet number is an invariant associated to a function-germ f defined over a stratified complex analytic space $(X, 0)$. It was introduced by Dutertre and Grulha, in [1], as a generalization of the local Euler obstruction, an important singular invariant defined by MacPherson, in [2]. The Brasselet number can also be seen as a generalization of the Milnor number for a function with nonisolated singularities defined over a (possibly) singular space, since it numerically describes the topology of $X \cap \{f = \delta\} \cap B_\epsilon$, the generalized Milnor fibre of f, where $0 < |\delta| \ll \epsilon$ is a regular value of f. Given two function-germs $f, g : (X, 0) \to (C, 0)$, we present formulas to compare the Brasselet numbers of f and of the restriction of f to $X \cap \{g = 0\}$, in the case where g has a one-dimensional critical set.

References

[1] Nicolas Dutertre and Nivaldo G Grulha. Lê–Greuel type formula for the Euler obstruction and applications. *Advances in Mathematics*, 251:127–146, 2014.

[2] Robert D MacPherson. Chern classes for singular algebraic varieties. *Annals of Mathematics*, pages 423–432, 1974.