Universidade Federal de São Carlos
Departamento de Matemática

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Falará sobre

Relative Bruce-Roberts number and Chern obstruction

Let $(X,0)$ be the germ of an equidimensional analytic set in $(\mathbb{C}^n,0)$ and $f=(f_1,f_2)$ a map-germ into the plane defined on X. In this work, we investigate topological invariants associated to the pair (f,X), among them, the Euler obstruction of f, $Eu_{f,X}(0)$, and under convenient assumptions, the Chern number of families of differential forms associated to f. The topological information provided by these invariants is useful, although difficult to calculate. The aim of the paper is to introduce the Bruce-Roberts and the relative Bruce-Roberts numbers as useful algebraic tools to capture the topological information giving by the Euler obstruction and the Chern numbers. Closed formulas are given when X, $X\cap f_2^{-1}(0)$, $X\cap f_2^{-1}(0)\cap f_1^{-1}(0)$ are ICIS. In the last section, for a 2-dimensional ICIS $(X,0)\subset(\mathbb{C}^n,0)$, we apply our results to give an alternative description for the number of cusps $c(f|_X)$ of an stabilization of an $\mathcal{A}$-finite map-germ $f=(f_1,f_2):(X,0)\to(\mathbb{C}^2,0)$. A formula for $c(f|_X)$ was first given in [1].

Referências

[1] D. Mond and J. J. Nuno-Ballesteros. Singularities of mappings: The local behavior of smooth and complex analytic mappings, volume 357. Springer Nature, 2020.

Data: 2 de feveriero de 2024
Horário: 16h00
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