

ON THE SUBANALYTICALLY TOPOLOGICAL TYPES OF FUNCTION GERMS

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ABSTRACT. In this work, we investigate the subanalytically (bi-Lipschitz) topological \mathcal{G} -equivalence for function germs from $(\mathbb{R}^n, 0)$ to $(\mathbb{R}, 0)$, where \mathcal{G} is one of the classical Mather's groups, i.e., $\mathcal{G} = \mathcal{A}, \mathcal{K}, \mathcal{C}$, or \mathcal{V} . We present relationships between these topological equivalence types. In particular, for subanalytic C^1 -function germs with isolated singularities the definitions of subanalytically C^0 - \mathcal{A} , C^0 - \mathcal{K} , and C^0 - \mathcal{V} -equivalence are equivalent. We show that the Lojasiewicz exponent and the multiplicity of analytic function germs are invariants of the bi-Lipschitz \mathcal{K} -equivalence. We also prove that every nonnegative analytic function germ f , which satisfies Kouchnirenko's nondegeneracy condition, is subanalytically bi-Lipschitz \mathcal{C} -equivalent (and hence, subanalytically C^0 - \mathcal{A} -equivalent) to the polynomial $\sum_{\alpha} x^{\alpha}$, where the sum is taken over the set of all vertices of the Newton polyhedron of f . The talk is based on recent joint work with NGUYỄN THẢO NGUYỄN BÙI.

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