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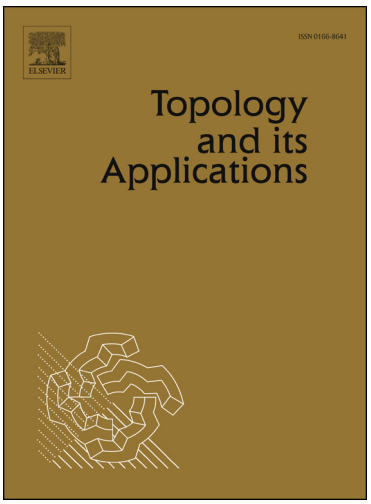

New techniques for classification of multigerms

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New techniques for classification of multigerms

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Abstract

The goal of these notes is to give an overview of the state of the art in classification of multigerms. We have tried to make them self-contained but certainly not extensive. The results included here scope most of the research on classification of multigerms carried out in the last 15 years with special emphasis on recent results by the authors of these notes and their collaborators.

Keywords: classification of singularities, multigerms, augmentations, concatenations, stable unfoldings
2000 MSC: 58K40, 58K20, 32S05

1. Introduction

The foundations of Singularity Theory of Differentiable Maps can be considered to be the fundamental works by Whitney, Thom and Mather. Their main concern was the classification of singularities of map germs from $\mathbb{K}^n$ to $\mathbb{K}^p$, for example, Whitney classified stable maps from the plane into the plane in [39], proving that any stable germ is equivalent to the fold or the cusp. Thom's work on Catastrophe Theory and Mather's work ([18, 19, 20]) was followed by Arnold's classification of simple singularities of functions in [2]. Since then this has been one of the main areas of research in Singularity Theory. In fact, complete classifications up to certain codimension for certain pairs (n, p) have been carried out by many authors ([8, 16, 21, 32, 34, 37] ...) and it is still an active field of research.

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