Combinatorial models in the topological classification of singularities of mappings

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Abstract

We will consider real analytic map germs $f\colon (\mathbb{R}^n,0) \to (\mathbb{R}^p,0)$ with isolated instability. We are interested in the topological classification under $\mathcal{A}$-equivalence (coordinate changes in the source and target). The classification is done by means of the link, obtained by taking the intersection of the image with a small enough sphere S^{p-1}_ϵ centered at the origin. When f has isolated zeros, the link is a stable mapping $S^{n-1} \to S^{p-1}$ and f is topologically equivalent to the cone on its link. When f has non isolated zeros, the situation is more complicated and we have to introduce the diagram link and a generalized version of the cone. We will present the last advances in the subject, mainly in low dimensions, and will see questions about topological triviality of families and also about finite determinacy for topological equivalence.