20 marca 2023 r.

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Doodles, Gauss words and the topology of singularities of surfaces in $\mathbb{R}^3$

Opis: According to a theorem due to Fukuda, any analytic map germ from $\mathbb{R}^n$ to $\mathbb{R}^p$ with $n \leq p$ and with isolated instability has a cone structure on its link, obtained by taking the intersection of the image with a small enough sphere. The link is a C^0-stable mapping between spheres whose isotopy class determines the topology of the initial map germ. In the case of surfaces in $\mathbb{R}^3$, the link is a doodle on the sphere S^2, that is, a closed curve with only transverse double points. The combinatorial model to describe the topology of doodles on the sphere is given by the Gauss words. We will present a survey on this classification and also some other new results about topological triviality of families and finite C^0-determinacy.