Morsifications of real plane curve singularities

Eugenii Shustin (Tel Aviv University

Abstract

A real morsification of a real plane curve singularity is a real deformation with the maximal possible number of hyperbolic nodes (i.e., equivalent to $x^2y^2 = 0$ over $\mathbb{R}$). We prove that any real plane curve singularity admits a real morsification. This was known before only in the case of all local branches being real (A'Campo, GiseinZade). We also discuss a relation between real morsifications and the topology of singularities and extend to arbitrary real morsifications the BalkeKaenders theorem stating that the A'CampoGusseinZade diagram associated to the morsification uniquely determines the real topological type of the initial curve singularity. Joint work with Peter Leviant.