

# First steps towards Lipschitz knot theory

Lev Birbrair, UFCE, Fortaleza

## Abstract

A link of an isolated singularity of a two-dimensional semi-algebraic surface in  $\mathbb{R}^4$  is a knot (or a link) in  $S^3$ . Thus the ambient Lipschitz classification of surface singularities in  $\mathbb{R}^4$  can be interpreted as a bi-Lipschitz refinement of the topological classification of knots (or links) in  $S^3$ . We show that, given a knot  $K$  in  $S^3$ , there are infinitely many distinct ambient Lipschitz equivalence classes of outer metric Lipschitz equivalent singularities in  $\mathbb{R}^4$  with the links topologically equivalent to  $K$ .

This is a joint work with Andrei Gabrielov and Misha Brandenbursky