Classification of complex algebraic curves under blow-spherical equivalence

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This talk is devoted to studying complex algebraic sets under (global) blow-spherical equivalence. This equivalence lives strictly between semialgebraic bi-Lipschitz equivalence and topological equivalence. The main results of this article are complete classifications of complex algebraic curves. Firstly, we present a complete classification of complex algebraic curves under blow-spherical homeomorphisms at infinity and, then, we present a complete classification of complex algebraic curves under (global) blow-spherical homeomorphisms. For the classification at infinity we also present a classification with normal forms. We also present several properties of the blow-spherical equivalence. For instance, we prove that the degree of curves is preserved under blow-spherical homeomorphisms at infinity. Another property presented here is a Bernstein-type result which says that a pure dimensional complex algebraic set which is blow-spherical homeomorphic at infinity to a Euclidean space must be an affine linear subspace.