

Janusz Adamus: On relative Nash approximation of complex analytic sets.

A basic problem in complex analysis is to approximate holomorphic maps by algebraic ones. This problem has a natural generalization in complex analytic geometry. Namely, one can ask whether a complex analytic set can be approximated by branches of algebraic sets (so-called Nash sets). In the case when the analytic set has only isolated singularities, this question is closely related to the classical problem of transforming an analytic set onto a Nash set by a biholomorphic map. The situation though is quite different when the singular locus is of higher dimension, as there exist analytic set germs which are not biholomorphically equivalent to any Nash set germ. A major progress in this direction was allowed by the use of the so-called Neron desingularization.

We will give a gentle introduction to the subject followed by a report on the recent developments in Nash approximation of analytic sets and mappings. Particularly, on the problem of relative approximation along arbitrary subsets.