Nonembeddability into a Fixed Sphere for a Family of Compact Real Algebraic Hypersurfaces.

Abstract:

We study the holomorphic embedding problem from a compact real algebraic hypersurface into a sphere. By our theorem, for any integer $N$, there is a family of compact real algebraic strongly pseudoconvex hypersurfaces in $C^2$, none of which can be locally holomorphically embedded into the unit sphere in $C^N$. This shows that the Whitney (or Remmert) type embedding theorem in differential topology (or in the Stein space theory, respectively) does not hold in the setting above. This is a joint work with Xiaojun Huang and Xiaoshan Li.