

A new approach to the local CR embedding problem

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Abstract

The local CR embedding problem is to determine which abstract CR manifolds are realizable in a neighborhood of each point as an embedded CR submanifold of some C^n . It has long been known that generic 3-dimensional CR manifolds are locally not embeddable, and that all strictly pseudoconvex CR manifolds of dimension 7 and higher are locally embeddable, but the 5-dimensional strictly pseudoconvex case remains open. In this talk, based on joint work with Robert Hladky, I will describe a new approach to studying the Neumann problem for the tangential Cauchy-Riemann complex, and describe our progress to date on applying it to the 5-dimensional embedding problem.