

C^∞ -hypoellipticity and extension of CR functions

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Abstract. Let M be a CR submanifold of a complex manifold X . The main result of this article is to show that CR -hypoellipticity at $p_0 \in M$ is necessary and sufficient for holomorphic extension of all germs at p_0 of CR functions on M to an ambient neighborhood of p_0 in X . As an application, we obtain that CR -hypoellipticity implies the existence of global generic embeddings and prove holomorphic extension for a large class of CR manifolds satisfying a higher order Levi pseudoconvexity condition. We also obtain results on the relationship of holomorphic wedge-extension and the C^∞ -wave front set for CR distributions.

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