JET DETERMINATION OF FINITE MAPPINGS

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Abstract. Given germs of real-analytic hypersurfaces $(M,0)$, $(M',0)$, we denote by $\mathcal{F}(M,0;M',0)$ the set of germs of holomorphic maps $H:(\mathbb{C}^N,0)\to(\mathbb{C}^N,0)$ which map M into M'. We say that the maps of M to M' are *determined by their k-jets* if the map

$$j_0^k:\mathcal{F}(M,0;M',0)\to J_0^k(\mathbb{C}^N,0;\mathbb{C}^N,0)$$

which associates to each map in $\mathcal{F}(M,0;M',0)$ each k-jet at the origin (i.e. its derivatives of order up to k at the origin) is injective. We discuss recent joint work with N. Mir on finite determination of mappings which are CR-transversal. In particular, we present the following theorem: Assume that M and M' are compact real-analytic hypersurfaces in $\mathbb{C}^N$. Then there exists an integer k such that for each $p\in M$, local CR-mappings from (M,p) into M' are uniquely determined by their k-jet.

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