section of M.

⌈ Given a smooth point $p \in M$ and a k-plane Λ_p in the tangent space to M at p, there is a k-dimensional analytic subvariety Z of M having Λ_p as tangent plane at p. ⌋

Our proof of the proper mapping theorem will use the discussion about currents from the preceding sections, together with the following

Levi Extension Theorem (I). Let f be a meromorphic function defined outside an analytic variety V of codimension ≥ 2 on a complex manifold M. Then f extends to a meromorphic function on M.

Proof. Let $(f)_\infty$ be the polar divisor of f in $M-V$, and let $\overline{(f)_\infty}$ be its closure in M. If we make the assumption that $\overline{(f)_\infty}$ is an analytic subvariety of M, then we can argue as follows: for any $p \in M$, let $\overline{(f)_\infty} = (g)$ in a nbd U of p. Then $g \cdot f = \tilde{h}$ is holomorphic in $U \cap (M-V)$, and hence by Hartog's theorem extends to a holomorphic function h in U. So h/g gives a meromorphic extension of f to U.