

By the Levi extension theorem, θ extends to a meromorphic 1-form on all of Δ^{n+1} .

□ We can apply Levi extension theorem (I) to a meromorphic 1-form θ , as follows:

Let $(\theta)_\infty$ be the polar divisor of θ in $\Delta^{n+1} - f(W)$, and let $\overline{(\theta)_\infty}$ be its closure in Δ^{n+1} . If we make the assumption that $\overline{(\theta)_\infty}$ is an analytic subvariety of Δ^{n+1} , then we can argue as follows: for any $p \in \Delta^{n+1}$, let $\overline{(\theta)_\infty} = (g)$ in a nbd U of p . Then $g \cdot \theta = \tilde{h}$ is holomorphic 1-form in $U \cap (\Delta^{n+1} - f(W))$, and hence by Hartogs' theorem extends to a holomorphic 1-form h in U by extending the coefficient of the one form \tilde{h} . So $\frac{h}{g}$ gives a meromorphic 1-form extension of θ

to U . Eventually, to Δ^{n+1} . \Rightarrow

The polar divisor of θ contains $f(M-W)$ and therefore is equal to $f(M)$.

□ Since $\theta = \frac{1}{2} \partial \log h + \frac{1}{2} \partial \bar{j}$ locally, i.e., for any $q \in f(M-W) - f(W)$, $\exists U_q$ open in Δ^{n+1} s.t.

$$\theta = \frac{1}{2} \partial \log h + \frac{1}{2} \partial \bar{j} \text{ on } U_q.$$

\Rightarrow Since $(h=0) = U_q \cap \Delta^{n+1}$, q is in the