

What we do know is that

$$\varphi \longmapsto \int_{M^*} f^*(\varphi), \quad \varphi \in A_c^{n,n}(\Delta^{n+1})$$

defines a closed positive current  $S \in \mathcal{D}'(\Delta^{n+1})$ .

⌈ See Reduction (3).  $\Rightarrow$

By the  $\partial\bar{\partial}$ -Poincaré lemma we may write

$$S = \left(\frac{\pi}{\sqrt{-1}}\right)^{-1} \partial\bar{\partial} \varphi,$$

where  $\varphi$  is a real distribution on  $\Delta^{n+1}$ .

⌈ See P387.  $(\pi^*)'\varphi$  is real plurisubharmonic  $\Rightarrow$

Around a point  $q \in f(M-W)$  lying outside the codimension  $\geq 2$  subvariety  $f(W)$ , the image  $f(M)$  is locally the divisor of a holomorphic function  $h$ .

⌈  $\exists p \in M-W$  s.t.  $f(p) = q. \Rightarrow$  By P398, since the image of a sufficiently small nbd of a point  $p \in M-W$  is a piece of smooth analytic hypersurface in  $\Delta^{n+1}$ ,  $\exists h \in \mathcal{O}(\Delta^{n+1})$  locally, i.e.,  $\exists$  an open set  $U \ni q$  s.t.  $(h=0) = U \cap f(M-W)$ ,  $U \cap f(W) = \emptyset$   $\Rightarrow$

By the Poincaré - Lelong formula

$$\partial\bar{\partial}(\varphi - \log|h|) = 0$$