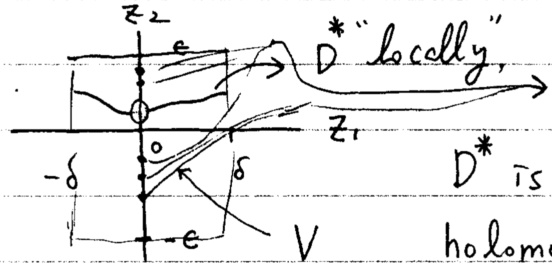

$D \cap \{z_1 = 0$, with $|z_2| \le \epsilon\}$

D^* is the graph of a bounded holomorphic function.

$\Rightarrow$ By Riemann extension theorem (P 9), we can extend the holomorphic function to $\{(z_1, z_2) : |z_1| \le \delta, |z_2| \le \epsilon\}$.

$\Rightarrow$ Since the graph of a holomorphic function is an analytic variety, on $\{(z_1, z_2) : |z_1| < \delta, |z_2| < \epsilon\}$, a set of a finite number of points $\cup$ the graph is analytic variety.

$\{(z_1, f(z_1)) \mid |z_1| < \delta\} = (z_2 - f(z_1) = 0)$

In general we use the by-now-familiar argument involving the elementary symmetric functions: set

$$\varphi_i(z) = \frac{1}{2\pi\sqrt{-1}} \int_{|z_2| = \epsilon} z_2^{\,i} \frac{dh(z_1, z_2)}{h(z_1, z_2)}$$

$$= \sum_{\nu=1}^{d} z_{2,\nu}(z_1)^i,$$

where $\pi^{-1}(z_1) = \{(z_1, z_{2,\nu}(z_1))\}_\nu$.

$\sqrt{\ }$

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$$= \frac{1}{2\pi\sqrt{-1}} \sum_{\nu=1}^{d} \int_{\partial B_\delta(z_{2\nu}(z_1))} z_2^{\,i} \frac{dz_2}{z_2 - z_{2\nu}(z_1)} = \frac{1}{2\pi i\sqrt{-1}} \sum_{\nu=1}^{d} z_{2\nu}(z_1)^i$$