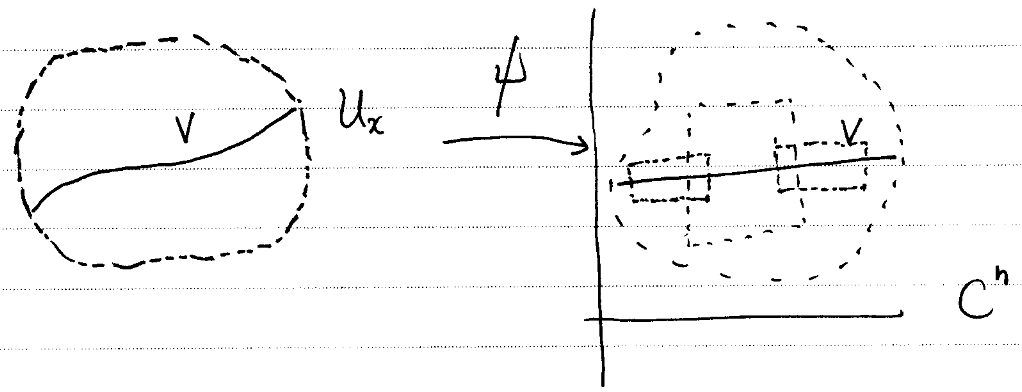
$$f^*: H^0(N, \Omega^p_N) \longrightarrow H^0(M, \Omega^p_M)$$

for each $p$.

Pf $M-V \xrightarrow{f} N$. If $\varphi$ is a global holomorphic $p$-form on $N$, $f^*\varphi$ is a holomorphic $p$-form on $M-V$.
For each $x \in V$, $\exists$ $U_x$ open set in $M$ s.t $U_x$ is biholomorphic to an open set in $\mathbb{C}^n$.
$\Rightarrow$ Locally, $f^*\varphi = \sum_{\# I = p} \varphi_I \, dz_I$, where $\varphi_I$ is a holomorphic function on $U_x - V$, and $dz_I = dz_{i_1} \wedge \cdots \wedge dz_{i_p}$.




Apply the proof of Hartogs' theorem to get the unique extension of each $\varphi_I$ on $U_x$. $\Rightarrow$ Since $\{U_x\}$ is countable, we obtain an extension of $f^*\varphi$. ⌟

More generally, if $E_M \longrightarrow M$ is any contravariant tensor bundle, the natural map $f^*$ from sections of $E_N$ over $N$ to sections of $E_M$ over $M-V$ gives a map

$$f^*: H^0(N, \mathcal{O}(E_N)) \longrightarrow H^0(M, \mathcal{O}(E_M)).$$