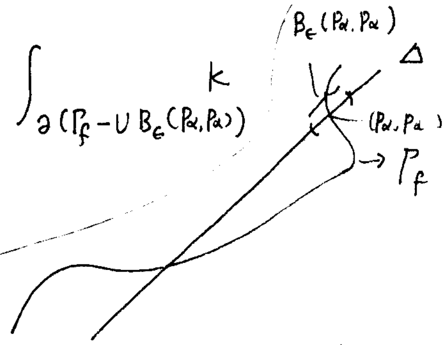
$$= \lim_{\epsilon \to 0} \sum_{\alpha} \int_{\|z_\alpha\| = \epsilon} K(z_\alpha, f(z_\alpha)).$$

⌜

$$\eta^\circ_\Delta(\Gamma_f) = \int_{\Gamma_f} \varphi = -\int_{\Gamma_f - \cup B_\epsilon(p_\alpha, p_\alpha)} \bar\partial K$$

(since $\varphi = -\bar\partial K$ away from Δ.)

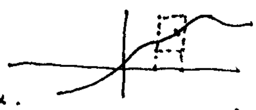
$$= -\int_{\Gamma_f - \cup B_\epsilon(p_\alpha, p_\alpha)} dK = -\int_{\partial(\Gamma_f - \cup B_\epsilon(p_\alpha, p_\alpha))} K$$



$$= \sum_\alpha \int_{\partial(\Gamma_f \cap B_\epsilon(p_\alpha, p_\alpha))} K$$

and since $K = 0$ outside $B_{2\epsilon}(p_\alpha, p_\alpha)$.

$$= \sum_\alpha \int_{\|z_\alpha\| = \epsilon} K(z_\alpha, f(z_\alpha))$$ (for we can take $B_\epsilon(p_\alpha, p_\alpha)$



and pull-back)

→ point: Integral depends on points near p_α.

$$= \lim_{\epsilon \to 0} \sum_\alpha \int_{\|z_\alpha\| = \epsilon} K(z_\alpha, f(z_\alpha))$$ since φ is smooth in an open set containing Γ_f, and K is locally integrable. ⌟

Now if we set $\omega_\alpha = z_\alpha - f(z_\alpha)$, then
$$d\omega_{\alpha_1} \wedge \cdots \wedge d\omega_{\alpha_n} = \det(I - J(f)) \cdot dz_{\alpha_1} \wedge \cdots \wedge dz_{\alpha_n},$$
and we have

$$\int_{\|z_\alpha\| = \epsilon} K(z_\alpha, f(z_\alpha)) = C_n \int_{\|z_\alpha\| = \epsilon} \frac{\sum (-1)^{i-1} \bar\omega_{\alpha_i} \, d\bar\omega_{\alpha_1} \wedge \cdots \wedge \widehat{d\bar\omega_{\alpha_i}} \wedge \cdots \wedge d\bar\omega_{\alpha_n} \wedge dz_{\alpha_1} \wedge \cdots \wedge dz_{\alpha_n}}{\|\omega_\alpha\|^{2n}}$$