For $\varphi \in A_c^{2k-1}(\Delta)$,

$$\int_V d\varphi = \lim_{\epsilon \to 0} \int_{V_\epsilon} d\varphi$$
$$= \lim_{\epsilon \to 0} \int_{\partial V_\epsilon} \varphi$$
$$= \lim_{\epsilon \to 0} \int_{\partial \pi^{-1}(T_\epsilon)} \varphi.$$

⌈

$$\int_V d\varphi = \int_{V \cap \Delta} d\varphi = \lim_{\epsilon \to 0} \int_{V\cap\Delta - \pi^{-1}(T_\epsilon)} d\varphi$$

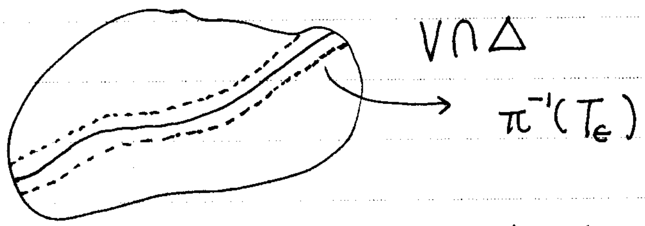
where $V \cap \Delta - \pi^{-1}(T_\epsilon) \subset (V \cap \Delta)^*$,

$$= \lim_{\epsilon \to 0} \int_{V_\epsilon} d\varphi = \lim_{\epsilon \to 0} \int_{\partial V_\epsilon} \varphi = \lim_{\epsilon \to 0} \int_{\partial \pi^{-1}(T_\epsilon)} \varphi$$

(since $\varphi = 0$ on $\partial(V \cap \Delta)$.) ⌋

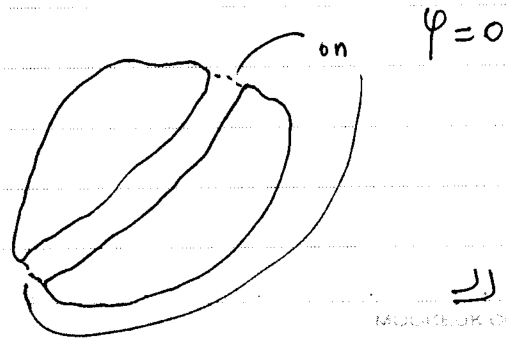
Thus to prove the result, we simply have to prove that the volume of $\partial \pi^{-1}(T_\epsilon) \to 0$ as $\epsilon \to 0$.

⌈



$\Rightarrow$ $V \cap \Delta - \pi^{-1}(T_\epsilon)$

$\Rightarrow$ ∂V_ϵ



⌋