Such a current may then be defined on all of $A^{n,n-q}(\mathbb{C}^n)$, not just on the forms with compact support.

┌ $\varphi \in A^{n,n-q}(\mathbb{C}^n) \Rightarrow$ We can find ϕ_1, ϕ_2 s.t. $\mathrm{supp}\,\phi_1 \subset \overline{U}^c$, $\mathrm{supp}\,\phi_2 \subset V$ $\quad U \cup V = \mathbb{C}^n$ & $\phi_1 + \phi_2 = 1$.

$\Rightarrow \phi_1 \varphi \in A_c^{n,n-q}(\overline{U}^c) \qquad \phi_2 \varphi \in A_c^{n,n-q}(V), \quad U \subset V$

$$T(\phi_1 \varphi) = 0 \qquad T(\varphi) = T(\phi_2 \varphi)$$

It remains to check if it is well-defined or not.

$\{U_\alpha\}$ locally finite open covering of $\mathbb{C}^n$. $\{\phi_\alpha\}$ part. of unity.

$\varphi \in A^{n,n-q}(\mathbb{C}^n)$. $\qquad \varphi = \sum \phi_\alpha \varphi_\alpha$

$\Rightarrow$ Since $\overline{U}$ is compact, $\exists$ a finite number of U_i's which intersect with U.

$\Rightarrow \quad T(\varphi) \equiv T(\phi_1 \varphi) + \cdots + T(\phi_n \varphi)$

Suppose we have another locally finite open covering $\{V_\beta\}$ of $\mathbb{C}^n$. $\Rightarrow$ Consider $\{U_\alpha \cap V_\beta\}$ which is locally finite open covering of $\mathbb{C}^n$. Let $\{\phi'_\beta\}$ be a partition of unity of $\{V_\beta\}$.

$\Rightarrow \quad T(\varphi) \equiv \sum_\beta T(\phi'_\beta \varphi) = \sum_\beta T(\phi'_\beta \sum_\alpha \phi_\alpha \varphi) = \sum_\alpha T(\phi_\alpha \sum_\beta \phi'_\beta \varphi) = \sum_{\alpha,\beta} T(\phi_\alpha \phi'_\beta \varphi) = \sum_\alpha T(\phi_\alpha \varphi)$.

$\Rightarrow$ The definition is well-defined. ┘

Using this device, we may define KT for a compactly supported current T by

$$KT(\varphi) = T(K\varphi), \quad \varphi \in A_c^{n,n-q+1}(\mathbb{C}^n).$$