Note that $|\langle \eta\wedge\varphi, \eta\wedge\varphi\rangle| \leq |\langle \eta, \eta\rangle|\,|\langle\varphi,\varphi\rangle|$.

$$K(z, z-u) = C_n \frac{\sum \overline{\Phi_i(u)} \wedge \Phi(z-u)}{\|u\|^{2n}}$$

$$\Rightarrow K(z, z-u)\wedge \varphi(z-u) = C_n \frac{\sum \overline{\Phi_i(u)}}{\|u\|^{2n}} \wedge \Phi(z-u)\wedge\varphi(z-u)$$

$\Rightarrow$ Thus differentions on $K(\varphi)(z)$ are dependent on $\varphi(z-u)$ only. $\Rightarrow$ For each z, $D_z^\alpha \varphi(z-u)$ has compact support. $\Rightarrow$ $\int_{u\in\mathbb{C}^n} K(z, z-u)\wedge D_z^\alpha \varphi(z-u)$ makes sence.

Since φ is C^∞, $D_z^\alpha (K\varphi)(z) = \int_{u\in\mathbb{C}^n} K(z, z-u)\wedge D_z^\alpha(\varphi(z-u))$. For example $\int_R \varphi(x,y)\,dy = \psi(x)$.

$$\frac{\psi(x+h)-\psi(x)}{h} = \int_R \frac{\varphi(x+h, y)-\varphi(x,y)}{h}\,dy$$

$$= \int_R \frac{\partial\varphi}{\partial x}(x+\theta h, y)\,dy \longrightarrow \int_R \frac{\partial \varphi}{\partial x}(x,y)\,dy$$

as $h\to 0$, for, since φ is C^∞ and compact support, $D\varphi$ is uniformly continuous.

We note that $K\varphi$ does not have compact support. There are analogues of $K\varphi$ for forms $\varphi\in A_c^{p,q}(\mathbb{C}^n)$ $(p\neq 0)$, but we shall leave it to the reader to write