matrix corresponds to an orthogonal matrix with det. 1, and σ is invariant under the proper orthogonal group. Here we can not omit the fact that a unitary matrix preserves the type. ⅃

Up to a constant to be specified in a moment, the component of type $(n, n-1)$ is

$$\beta = C_n \frac{\left(\sum \overline{\Phi_i(z)} \wedge \Phi(z) \right)}{\|z\|^{2n}}$$

$$= C_n \frac{*(r\bar\partial r)}{r^{2n}} .$$

⌈ $$*(r\bar\partial r) = *\left(r \sum \frac{\partial r}{\partial \bar z_i} d\bar z_i\right) = *\left(r \sum \frac{z_i}{2r} d\bar z_i\right)$$

$$= \frac{1}{2} * \left(\sum z_i \, d\bar z_i \right) = \frac{1}{2} \sum *(z_i \, d\bar z_i) .$$

$$r\bar\partial r \wedge *(r\bar\partial r) = \langle r\bar\partial r, r\bar\partial r \rangle \, \Phi(z) \wedge \overline{\Phi(z)}$$
$$= \frac{1}{4} \langle \sum z_i d\bar z_i , \sum z_i d\bar z_i \rangle = \frac{1}{4} \sum |z_i|^2 \|d\bar z_i\| \, \Phi(z) \wedge \overline{\Phi(z)}$$

$$= \frac{1}{4} r^2 a \, \Phi(z) \wedge \overline{\Phi(z)} . \qquad a = \|d\bar z_i\|$$

$$r\bar\partial r \wedge \sum \overline{\Phi_i(z)} \wedge \Phi(z) = \frac{1}{2} \sum z_i \, d\bar z_i \wedge \sum \overline{\Phi_i(z)} \wedge \Phi(z)$$

$$= \frac{1}{2} \sum |z_i|^2 \, \overline{\Phi(z)} \wedge \Phi(z) .$$

Suppose $r\bar\partial r \wedge \omega = 0$. $\Rightarrow$ $\omega = 0$. if ω is of $(n, n-1)$ type.

Anyway, Nonsense ?

$\sqrt{\ } \sum \overline{\Phi_i(z)} \wedge \Phi(z) = *(r\, \bar\partial r)$, up to a constant, can by proved by computations easily. ⅃

Clearly $\beta \in L^{n,n-1}(\mathbb{C}^n, loc)$, and since $\bar\partial \, \overline{\Phi_i(z)} = \overline{\Phi(z)}$, the