

nonnegative. $\Rightarrow \Omega$ is positive. \Rightarrow

(2) The class \mathbb{E}_+^p of positive forms of degree p is independent of local coordinates chosen on W .

$$\text{Let } \phi \in \mathbb{E}_+^p. \Rightarrow \phi(z) = \sum_{\substack{\#I=p \\ \#J=p}} \phi_{I\bar{J}} dz_I \wedge d\bar{z}_J$$

$$\phi(w) = \sum \phi'_{I\bar{J}} d\bar{w}_I \wedge d\bar{w}_J$$

\Rightarrow Given a system L^{n-p} of purely linear forms $\alpha_1, \dots, \alpha_{n-p}$ at $z_0 \in W^n$, then \exists unique

α_{ij} 's corresponding $\alpha_1, \dots, \alpha_{n-p}$ respectively, more precisely, at z_0 ,

$$\alpha_1 = \alpha_{11} dz_1 + \dots + \alpha_{1n} dz_n$$

$$\alpha_2 = \alpha_{21} dz_1 + \dots + \alpha_{2n} dz_n$$

$$\vdots$$

$$\alpha_{n-p} = \alpha_{n-p,1} dz_1 + \dots + \alpha_{n-p,n} dz_n$$

$$\alpha_1 = \alpha'_{11} d\bar{w}_1 + \dots + \alpha'_{1n} d\bar{w}_n$$

$$\vdots$$

$$\alpha_{n-p} = \alpha'_{n-p,1} d\bar{w}_1 + \dots + \alpha'_{n-p,n} d\bar{w}_n$$

$$\phi(z) \wedge (i\alpha_1 \wedge \bar{\alpha}_1) \wedge (i\alpha_2 \wedge \bar{\alpha}_2) \wedge \dots \wedge (i\alpha_{n-p} \wedge \bar{\alpha}_{n-p}) = \ell(\phi, L^{n-p}) \tau_n(z)$$

$$\text{where } \tau_n = dz_1 \wedge d\bar{z}_1 \wedge \dots \wedge dz_n \wedge d\bar{z}_n$$

$$\Rightarrow \phi(w) \wedge (i\alpha_1 \wedge \bar{\alpha}_1) \wedge \dots \wedge (i\alpha_{n-p} \wedge \bar{\alpha}_{n-p}) = \ell(\phi, L^{n-p})' \tau_n(w)$$

$$\Rightarrow \tau_n(w) = \tau_n(z) \left| \det \left(\frac{\partial \bar{w}_i}{\partial \bar{z}_j} \right) \right|^2$$

$$\Rightarrow \ell(\phi, L^{n-p})' \left| \det \left(\frac{\partial \bar{w}_i}{\partial \bar{z}_j} \right) \right|^2 = \ell(\phi, L^{n-p})$$

$$\Rightarrow \ell(\phi, L^{n-p})' \in \mathbb{R}^+ \Leftrightarrow \ell(\phi, L^{n-p}) \in \mathbb{R}^+, \text{ since } \left| \det \left(\frac{\partial \bar{w}_i}{\partial \bar{z}_j} \right) \right|^2 > 0.$$