

(a)  $t(\phi)$  is homogeneous of degree  $(p, p)$ :

(b) for each system  $L^{n-p} = (\alpha_1, \dots, \alpha_{n-p})$  of purely linear forms with constant coefficients one has

$$t \wedge (i\alpha_1 \wedge \bar{\alpha}_1) \wedge \dots \wedge (i\alpha_{n-p} \wedge \bar{\alpha}_{n-p}) = T(t, L^{n-p}),$$

where  $T(L^{n-p})$  is a positive distribution (and therefore a positive measure). Equivalently, one can say that for each  $f \in \mathcal{D}(W)$ ,  $f \geq 0$ ,

$$\int f t(i\alpha_1 \wedge \bar{\alpha}_1) \wedge \dots \wedge (i\alpha_{n-p} \wedge \bar{\alpha}_{n-p}) \geq 0.$$

Here,  $\alpha_1, \alpha_2, \dots, \alpha_{n-p}$  are differential forms with constant coefficients  $\Rightarrow \alpha_i = \alpha_{i1} dz_1 + \dots + \alpha_{in} dz_n$  where  $\alpha_{ij}$ 's are constants.  $\square$

For the last three days, we had a trouble in proving the equivalence of  $(-1)^{\frac{p(p-1)}{2}} T(\eta \wedge \bar{\eta}) \geq 0$  and  $(\sum t_{ij} \lambda_i \bar{\lambda}_j)(\alpha) \geq 0$ . To show the equivalence, we need to prove the following: Let  $n=2$ .

Suppose  $t_{11}, t_{12}, t_{21}, t_{22}$  are distributions on  $\mathbb{C}^2$  satisfying the following conditions.

①  $T = t_{11} + t_{12} + t_{21} + t_{22}$  is positive, more generally,  $T(\lambda) = |\lambda_1|^2 t_{11} + \lambda_1 \bar{\lambda}_2 t_{12} + \bar{\lambda}_1 \lambda_2 t_{21} + |\lambda_2|^2 t_{22}$

is positive for any  $\lambda_1, \lambda_2 \in \mathbb{C}$ . ②  $t_{12} = \bar{t}_{21}$

Then for any  $f_1, f_2 \in C_c^\infty(\mathbb{C}^2)$ ,

$t_{11}(|f_1|^2) + t_{21}(\bar{f}_1 f_2) + t_{12}(f_1 \bar{f}_2) + t_{22}(|f_2|^2)$  is  $\geq 0$ ?