$$\bar{Z} W Z = (X - iY) W (X + iY) = (XW - iI)\quad(X + iY)$$
$$= XWX - iX + iXWY + Y = XWX - iX + iX + Y =$$
$$XWX + Y$$
$$Z W \bar{Z} = (X + iY) W (X - iY) = (XW + iI)(X - iY) = XWX$$
$$+ iX - iXWY + Y = XWX + iX - iX + Y = XWX + Y.$$

Thus $\quad \bar{Z} W Z = Z W \bar{Z} = {}^t(\bar{Z} W Z)$.

$\Rightarrow \quad (\bar{Z} W Z)_{\epsilon r} = (\bar{Z} W Z)_{r \epsilon} \quad \Rightarrow$ The third term is 0, too.

$$\Rightarrow \quad \Theta = \pi \sum_{\alpha, \beta, r} \delta_\alpha W_{\alpha\beta} (\bar{Z}_{\beta r} - Z_{\beta r})\, dx_\alpha \wedge dx_{n+r}$$

$$= \pi \sum_{\alpha, \beta, r} \delta_\alpha W_{\alpha\beta} (-2\sqrt{-1}\, Y_{\beta r})\, dx_\alpha \wedge dx_{n+r}$$

$$= \pi \sum \delta_\alpha \delta_{\alpha r} (-2\sqrt{-1})\, dx_\alpha \wedge dx_{n+r}$$

$$= (-2\sqrt{-1})\, \pi \sum \delta_r\, dx_r \wedge dx_{n+r}$$

$$\Rightarrow \quad \frac{\sqrt{-1}}{2\pi} \Theta = \sum \delta_\alpha\, dx_\alpha \wedge dx_{n+\alpha} = \omega.$$

$$\Rightarrow \quad c_1(L) = \left[\frac{\sqrt{-1}}{2\pi} \Theta \right] = [\omega]. \qquad ⅃$$

To continue our description of line bundles on M, we want to consider the set of line bundles $L \to M$ having a given positive Chern class. We note that for any $\mu \in M$ the translation $\tau_\mu : M \longrightarrow M$ is homotopic to the identity and hence for any line bundle $L \longrightarrow M$,

$$c_1(\tau_\mu^* L) = c_1(L).$$