$\Rightarrow$ Let $x_1, \cdots x_{2n}$ be the dual real coordinates (on V) to $\lambda_1, \cdots \lambda_{2n}$.

$\Rightarrow$ $\omega = \frac{1}{2} \sum q_{ij}\, dx_i \wedge dx_j = \sum \delta_i\, dx_i \wedge d\, x_{i+n}$,

since, first put $\omega = \frac{1}{2} \sum r_{ij}\, dx_i \wedge dx_j$ and calculate $\omega(\lambda_i, \lambda_j) \equiv \omega(\frac{\partial}{\partial x_i}, \frac{\partial}{\partial x_j})$.

Now if ω is nondegenerate – that is, if $\omega^n \neq 0$, as will be the case if ω is positive – then $\delta_\alpha \neq 0$ for all α, and we can take as our basis for the complex vector space V the vectors

$$e_\alpha = \delta_\alpha^{-1} \lambda_\alpha, \qquad \alpha = 1, \cdots n.$$

If ω is positive, by considering the metric induced by ω, see P89, we may express ω as

$$\omega = \frac{\sqrt{-1}}{2} \sum \varphi_i \wedge \overline{\varphi_i}.$$

$\Rightarrow$ $\omega^n = n!\, \Phi$, $\Phi \overset{\wedge}{\vee}$ volume form on a manifold.

$\Rightarrow$ $\omega^n \neq 0$. $\Rightarrow$ If $\omega^n \neq 0$. then $\delta_\alpha \neq 0$ for all α clearly.

The period matrix of $\Lambda \subset V$ will then be of the form

$$\Omega = (\Delta_\delta, Z);$$