such a period matrix is called normalized.

⌈ According to P304, $\Omega = (\omega_{\alpha i})$ s.t $\lambda_i = \sum_\alpha \omega_{\alpha i} e_\alpha$.

$\Rightarrow$

$$\lambda_i = \delta_i \delta_i^{-1} \lambda_i \Rightarrow \begin{array}{ll} \omega_{ii} = \delta_i & i = 1, \cdots n. \\ \omega_{\alpha i} = 0 & \alpha \neq i, \ 1 \leq i \leq n. \end{array}$$

$$\Rightarrow \Omega = \begin{pmatrix} \delta_1 & & 0 & \\ & \ddots & & Z \\ 0 & & \delta_n & \end{pmatrix}.$$

⌋

As before, ω will be of type (1,1) if

$$\Omega \cdot Q_\delta^{-1} \cdot {}^t\Omega = 0,$$

i.e., if

$$(\Delta_\delta, Z) \begin{pmatrix} 0 & -\Delta_{\delta^{-1}} \\ \Delta_{\delta^{-1}} & 0 \end{pmatrix} \begin{pmatrix} \Delta_\delta \\ {}^tZ \end{pmatrix} = (\Delta_\delta, Z) \begin{pmatrix} -\Delta_\delta^{-1} \cdot {}^tZ \\ I \end{pmatrix}$$

$$= Z - {}^tZ = 0,$$

i.e., if Z is symmetric; and ω will be positive as well if

$$-\sqrt{-1} \cdot \Omega \cdot Q_\delta^{-1} \cdot {}^t\overline{\Omega} > 0,$$

i.e., if

$$-\sqrt{-1}\,(\Delta_\delta, Z) \begin{pmatrix} 0 & -\Delta_{\delta^{-1}} \\ \Delta_{\delta^{-1}} & 0 \end{pmatrix} \begin{pmatrix} \Delta_\delta \\ {}^t\overline{Z} \end{pmatrix} = -\sqrt{-1}\,(Z - {}^t\overline{Z})$$

$$= 2 \cdot \mathrm{Im}\, Z > 0.$$