

$$\begin{array}{ccc}
{}^{\ell}\mathbb{C}_{\ell}^{\text{U}} \dashv {}^{\ell}\mathbb{C}_{2r}^{\text{C}} & = & \frac{\eta|\xi \in {}^{\ell}\mathbb{C}_{2r}^{\text{C}}}{\eta\dot{\eta} = \xi\xi^*} \\
\downarrow & & \\
{}^{\ell}\mathbb{C}_{\ell}^{\text{U}} \dashv {}^{\ell}\mathbb{C}_{2r}^{\text{C}} & = & \frac{o \cdot \eta|o \cdot \xi \in {}^{\ell}\mathbb{C}_{2r}^{\text{C}}}{o \in {}^{\ell}\mathbb{C}_{\ell}^{\text{U}}} \\
\downarrow & & \\
{}^{\text{C}}{}^{\text{U}} \dashv {}^{\text{C}}{}_{2r}^{\text{C}} & = & \frac{\eta|\xi \in {}^{\text{C}}{}_{2r}^{\text{C}}}{\eta\dot{\eta} = \xi\xi^*} \\
\downarrow & & \\
\underbrace{o \cdot \eta \overline{o \cdot \eta^*}} - \underbrace{o \cdot \xi \overline{o \cdot \xi^*}} & = & \underbrace{o \eta\dot{\eta}} - \underbrace{\xi\xi^* \dot{o}} \\
\xi = \lambda\sigma:\eta = \lambda\tau & & \\
\sigma:\tau \in {}^{\ell}\mathbb{C}_{2r}^{\text{U}} & & \\
\tau\dot{\tau}^* = 1 = \sigma\dot{\sigma}^* & & \\
\eta\dot{\eta} = \lambda\tau\dot{\tau}\lambda = \dot{\lambda}^2 = \lambda\sigma\dot{\sigma}\lambda = \xi\xi^* & &
\end{array}$$