

$$U = \xi \underbrace{1_p - xy^*|x}_{3} = \xi \underbrace{1_p|x^y}_{3}$$

$$V = \eta \underbrace{\overset{*}{v}_3|q - \overset{*}{v}u}_{3} = \eta \underbrace{\overset{*}{v}^u_3|q}_{3}$$

$$g = \frac{1_p \left| \begin{array}{c} -x^y \\ -\overset{*}{v}^u \end{array} \right| 1_q}{-\overset{*}{v}^u \left| \begin{array}{c} -x^y \\ 1_q \end{array} \right| 1_q} \in G^{\mathbb{C}}$$

$$U \cdot g = \xi \underbrace{1_p|x^y}_{3} \frac{1_p \left| \begin{array}{c} -x^y \\ -\overset{*}{v}^u \end{array} \right| 1_q}{-\overset{*}{v}^u \left| \begin{array}{c} -x^y \\ 1_q \end{array} \right| 1_q} = \xi \underbrace{1_p - xy^*\overset{*}{v}^u|0}_{3} = \mathbb{C}_p|0$$

$$V \cdot g = \eta \underbrace{\overset{*}{v}^u_3|q}_{3} \frac{1_p \left| \begin{array}{c} -x^y \\ -\overset{*}{v}^u \end{array} \right| 1_q}{-\overset{*}{v}^u \left| \begin{array}{c} -x^y \\ 1_q \end{array} \right| 1_q} = \eta \underbrace{0_3|q - \overset{*}{v}^u xy}_{3} = 0|\mathbb{C}_q$$

$${}^z g = \overbrace{a+zc}^{-1} \underbrace{b+zd}_{3}$$

$${}^0 g = \overline{a}^{-1} b$$

$$\dot{z} {}^z g = -\overbrace{a+zc}^{-1} \dot{z} c \overbrace{a+zc}^{-1} \underbrace{b+zd}_{3} + \overbrace{a+zc}^{-1} \dot{z} d = \overbrace{a+zc}^{-1} \dot{z} \underbrace{d - c \overbrace{a+zc}^{-1} \underbrace{b+zd}_{3}}_{3}$$

$$\dot{z} {}^0 g = \overline{a}^{-1} \dot{z} \underbrace{d - c \overline{a}^{-1} b}_{3}$$

$$\frac{a \left| \begin{array}{c} b \\ c \end{array} \right| d}{c \left| \begin{array}{c} b \\ d \end{array} \right| d} = \frac{1 \left| \begin{array}{c} 0 \\ c \overline{a}^{-1} \end{array} \right| 1}{c \overline{a}^{-1} \left| \begin{array}{c} 0 \\ 1 \end{array} \right| 1} \frac{a \left| \begin{array}{c} 0 \\ d - c \overline{a}^{-1} b \end{array} \right| 1}{0 \left| \begin{array}{c} 0 \\ d - c \overline{a}^{-1} b \end{array} \right| 1} \frac{1 \left| \begin{array}{c} \overline{a}^{-1} b \\ 0 \end{array} \right| 1}{0 \left| \begin{array}{c} \overline{a}^{-1} b \\ 1 \end{array} \right| 1}$$

$$1 = \det \frac{a \left| \begin{array}{c} b \\ c \end{array} \right| d}{c \left| \begin{array}{c} b \\ d \end{array} \right| d} = \det a \det \underbrace{d - c \overline{a}^{-1} b}_{3}$$

$$\det {}^0 g = \overline{\det a}^{-2}$$