

$$g \in G_+$$

$${}^z\Omega = {}^{z\cdot\sigma}\varphi$$

$$z\cdot\sigma = z^{-z}$$

$$w {}^z\sigma = \left(w - z \overset{*}{w} z\right) {}^zB_{-z}^{-1}$$

$${}^z\overline{\gamma \rtimes \Omega} = \partial_t^0 {}^{z\cdot g_t}\Omega = \gamma_z {}^z\Omega = {}^z\gamma {}^z\sigma {}^{z\cdot\sigma}\varphi = \left({}^z\gamma - z {}^z\overset{*}{\gamma} z\right) {}^zB_{-z}^{-1} {}^{z\cdot\sigma}\varphi$$

$$(z\cdot g)^{-z\cdot g} {}^zg^* = z^{-z} - \overline{0\cdot g^*}^{-z}$$

$${}^{z\cdot g}\sigma {}^zg^* = {}^z\sigma - {}^{0\cdot g^*}\mathfrak{t}_z^*$$

$${}^w\mathfrak{t}_z^* = {}^wB_{-z}^{-1}$$

$$\left({}^z\gamma - z {}^z\overset{*}{\gamma} z\right) {}^zB_{-z}^{-1} + {}^z\sigma {}^z\gamma_z^* = {}^z\gamma {}^z\sigma + {}^z\sigma {}^z\gamma^* = \partial_t^0 \left(z\cdot g_t \sigma {}^zg_t^*\right) = -{}^0\gamma^* \underbrace{{}^0\mathfrak{t}_z^*}_{=\text{id}} = -{}^0\gamma^*$$

$$\left({}^z\gamma - z {}^z\overset{*}{\gamma} z\right) {}^zB_{-z}^{-1} = -{}^0\gamma^* - {}^z\sigma {}^z\gamma^*$$

$$\gamma \in \Gamma^{\mathbb{C}} \Rightarrow {}^z\overline{\gamma^* \rtimes \Omega} = \left({}^0\gamma^* + {}^z\sigma {}^z\gamma^*\right) {}^{z\cdot\sigma}\varphi$$

$${}^z\sigma \cdot k = z^{-z} \cdot k = \overline{z\cdot k}^{-z\cdot k} = {}^{z\cdot k}\sigma$$

$${}^z\sigma \cdot \varkappa = \underline{z\cdot \varkappa} {}^z\sigma = \left(z\cdot \varkappa - z \overline{z\cdot \overset{*}{\varkappa}} z\right) {}^zB_{-z}^{-1}$$

$$0 = {}^w\overline{\varkappa \rtimes \varphi} = w \cdot \varkappa {}^w\varphi$$

$$0 = {}^w\overline{{}^z\gamma^* \rtimes \varphi} = w \cdot {}^z\gamma^* {}^w\varphi$$

$$0 = {}^{z\cdot\sigma}\overline{{}^z\gamma^* \rtimes \varphi} = {}^z\sigma \cdot {}^z\gamma^* {}^{z\cdot\sigma}\varphi$$

$$\mathfrak{g}_+^{\mathbb{C}} \ni \gamma \Rightarrow \begin{cases} {}^0\gamma^* = 0 \\ {}^z\gamma^* \in \mathfrak{k}_+^{\mathbb{C}} \end{cases}$$