

$$\mathfrak{G} |_{\mathfrak{U}\mathbb{L}} = \mathfrak{G}_{\pm}^0 |_{\mathfrak{U}\mathbb{L}} \times \mathfrak{G}^{\mathcal{R}} |_{\mathfrak{U}\mathbb{L}} \times \mathfrak{G}^{2\mathcal{R}} |_{\mathfrak{U}\mathbb{L}}$$

$$\mathfrak{G} |_{\mathfrak{E}\mathbb{L}} = \mathfrak{G}_{\pm}^0 |_{\mathfrak{E}\mathbb{L}} \times \mathfrak{G}^{\mathcal{R}} |_{\mathfrak{E}\mathbb{L}} \times \mathfrak{G}^{2\mathcal{R}} |_{\mathfrak{E}\mathbb{L}}$$

$$\mathfrak{G}_1^0 |_{\mathfrak{U}\mathbb{L}} = \frac{\delta \in \mathfrak{E}(\mathbb{L})}{e\delta = 0} = \mathfrak{E}(\mathbb{L}:e)$$

$$\delta \rtimes g_e = \delta$$

$$\mathfrak{G}_-^0 |_{\mathfrak{U}\mathbb{L}} = \frac{a - z\dot{a}z \partial_z}{a = \dot{a} \in U} \times \frac{c - z\dot{c}z \partial_z}{c \in W}$$

$$\overbrace{a - z\dot{a}z} \rtimes g_e = 2\dot{e}a: \quad \overbrace{c - z\dot{c}z} \rtimes g_e = c - z\dot{c}z$$

$$\mathfrak{G}^{\mathcal{R}} |_{\mathfrak{U}\mathbb{L}} = \frac{\overbrace{b - z\dot{b}z + 2\kappa z\dot{b}e - z\dot{e}b} \partial_z}{b \in V}$$

$$\overbrace{b - z\dot{b}z + 2z\dot{b}e - z\dot{e}b} \rtimes g_e = \sqrt{2}b + 2\dot{e}e$$

$$\overbrace{b - z\dot{b}z - 2z\dot{b}e - z\dot{e}b} \rtimes g_e = -\sqrt{2}b + 2\dot{e}b$$

$$\mathfrak{G}^{2\mathcal{R}} |_{\mathfrak{U}\mathbb{L}} = \frac{a - z\dot{a}z + 2\kappa z\dot{a}e \partial_z}{a = -\dot{a} \in U}$$

$$\overbrace{a - z\dot{a}z + 2z\dot{a}e} \rtimes g_e = 2a$$

$$2\dot{a}e = \dot{a}e - \dot{e}a$$

$$\overbrace{a - z\dot{a}z - 2z\dot{a}e} \rtimes g_e = -2\dot{a}$$

$$\mathfrak{G}^{\lambda} |_{\mathfrak{U}\mathbb{L}} = \frac{b \in \mathfrak{G} |_{\mathfrak{U}\mathbb{L}}}{b \rtimes \underbrace{e - \dot{e}} = \lambda b}$$

$$\overbrace{X_u^- + \alpha \dot{u}e - \dot{e}u} \rtimes X_e^- = 2\dot{u}e - \dot{e}u + \alpha X_{\underbrace{\dot{e}u - e\dot{u}}}^- = \lambda \overbrace{X_u^- + \alpha \dot{u}e - \dot{e}u}$$

$$u = \dot{u} \in U \Rightarrow \dot{u}e - \check{e}u = 0$$

$$e\check{e}u - e\dot{u}e = u - \dot{u} = 0 \Rightarrow \lambda = 0 = \alpha$$

$$u = -\dot{u} \in U \Rightarrow e\check{e}u - e\dot{u}e = u - \dot{u} = 2u \Rightarrow \lambda = 2\alpha$$

$$\lambda\alpha = 2 \Rightarrow \begin{cases} \alpha = 1 & \lambda = 2 \\ \alpha = -1 & \lambda = -2 \end{cases}$$

$$u \in V \Rightarrow \check{e}u - e\dot{u}e = u/2 \Rightarrow \lambda = \alpha/2$$

$$\lambda\alpha = 2 \Rightarrow \begin{cases} \alpha = 2 & \lambda = 1 \\ \alpha = -2 & \lambda = -1 \end{cases}$$