$$\underset{\omega}{\mathfrak{S}}|_{\,\mathrm{U}}\mathbb{L} = \underset{\omega}{\mathfrak{S}}_1|_{\,\mathrm{U}}\mathbb{L} \times \underset{\omega}{\mathfrak{S}}^{\bullet}_{-}|_{\,\mathrm{U}}\mathbb{L} \times \underset{\omega}{\mathfrak{S}}^{<}|_{\,\mathrm{U}}\mathbb{L} \text{ Iwasawa}$$

$$\underset{\omega}{\mathfrak{U}}|_{\,\mathrm{U}}\mathbb{L} = \underset{\omega}{\mathfrak{U}}_1|_{\,\mathrm{U}}\mathbb{L} \times \underset{\omega}{\mathfrak{U}}^{\bullet}_{-}|_{\,\mathrm{U}}\mathbb{L} \times \underset{\omega}{\mathfrak{U}}^{<}|_{\,\mathrm{U}}\mathbb{L}$$

$$\underset{\omega}{\mathfrak{S}}^{<}|_{\,\mathrm{U}}\mathbb{L} = \sum_{i<j} \underset{\omega}{\mathfrak{S}}^{1}_{j-i}|_{\,\mathrm{U}}\mathbb{L} \times \sum_{0\leqslant i\leqslant j\leqslant r} \underset{\omega}{\mathfrak{S}}^{1}_{j+i}|_{\,\mathrm{U}}\mathbb{L}$$

$$= \sum_{i<j} \underset{\omega}{\mathfrak{S}}^{1}_{j-i}|_{\,\mathrm{U}}\mathbb{L} \times \underset{\omega}{\mathfrak{S}}^{1}|_{\,\mathrm{U}}\mathbb{L} \times \underset{\omega}{\mathfrak{S}}^{2}|_{\,\mathrm{U}}\mathbb{L}$$

$$\underset{\omega}{\mathfrak{S}}^{\bullet}_{-}|_{\,\mathrm{U}}\mathbb{L} = \mathbb{K}\frac{\underbrace{e_k - z e_k^* z}\partial_z}{1 \leqslant k \leqslant r}$$

$$\underbrace{\ltimes \sum_k \lambda^k \underbrace{e_k - \overset{*}{e}_k}}_{\mathcal{N}} = 2\sum_j \underbrace{a\,(j-1)+1+b}\,\lambda^j$$

$$\text{LHS } = \sum_k \lambda^k \underbrace{\ltimes \underbrace{e_k - \overset{*}{e}_k}}_{\mathcal{N}} = \sum_{i<j} a\underbrace{\lambda^j - \lambda^i} + \sum_{i<j} a\underbrace{\lambda^j + \lambda^i} + \sum_j \underbrace{2\lambda^j + 2b\lambda^j}$$

$$= 2a\sum_{i<j}\lambda^j + 2\,(1+b)\sum_j \lambda^j = \text{ RHS}$$

$$\varrho = \sum_j \underbrace{a\,(j-1)+1+b}\,\delta^j$$