

$$\Lambda p_m=\frac{1}{\left(\ell a/2\right)_m}p_m$$

$$\underbrace{\Lambda p}_{S_\ell^{\mathbb{C}}}\overline{\times}\underbrace{\Lambda q}_{\ell a/2}=p\overline{\times}_{\ell a/2}q$$

$$\begin{array}{ccccccc} \mathcal{P}_\ell(Z) & \xrightarrow{\hspace{1.5cm} \Lambda \hspace{1.5cm}} & \mathcal{H}_o & \xleftarrow[\mathfrak{g}_w]{\hspace{1.5cm}} & \mathcal{H}_w & \xleftarrow[\hspace{1.5cm} g]{\hspace{1.5cm}} & \mathcal{H}_{wg} \\ \downarrow \overleftarrow{\mathfrak{g}_z\mathfrak{g}_w^{-1}} & & \downarrow [\mathfrak{g}_z\mathfrak{g}_w^{-1}] & & \downarrow \mathcal{B}_z^w & & \downarrow \mathcal{B}_{zg}^{wg} \\ \mathcal{P}_\ell(Z) & \xrightarrow{\hspace{1.5cm} \Lambda \hspace{1.5cm}} & \mathcal{H}_o & \xleftarrow[\mathfrak{g}_z]{\hspace{1.5cm}} & \mathcal{H}_z & \xleftarrow[\hspace{1.5cm} g]{\hspace{1.5cm}} & \mathcal{H}_{zg} \end{array}$$

$$\mathcal{B}_z^w=\overleftarrow{\mathfrak{g}_z}^{-1}\Lambda\overleftarrow{\mathfrak{g}_z\mathfrak{g}_w^{-1}}\Lambda^{-1}\overleftarrow{\mathfrak{g}_w}=\overleftarrow{k_z\mathfrak{g}_z}^{-1}\Lambda\overleftarrow{k_z\mathfrak{g}_zk_w\mathfrak{g}_w}^{-1}\Lambda^{-1}\overleftarrow{k_w\mathfrak{g}_w}$$

$$\underbrace{\nabla_z\Phi}_z=\partial_t^0\mathcal{B}_z^{z_t}\Phi_{z_t}\smile\frac{\mathcal{B}_z^{z_t}\Phi_{z_t}-\Phi_z}{t}$$

$$1\in \mathcal{P}_\ell\left(Z\right)$$

$$B\ni z\mapsto \mathfrak{1}_z\in\mathcal{H}_z$$

$$\mathfrak{1}_z=\overleftarrow{\mathfrak{g}_z}^{-1}\Lambda\overleftarrow{\mathfrak{g}_z}\mathfrak{1}=\overleftarrow{k_z\mathfrak{g}_z}^{-1}\Lambda\overleftarrow{k_z\mathfrak{g}_z}\mathfrak{1}$$

$$\mathcal{B}_z^w\mathfrak{1}_w=\overleftarrow{\mathfrak{g}_z}^{-1}\Lambda\overleftarrow{\mathfrak{g}_z\mathfrak{g}_w^{-1}}\Lambda^{-1}\overleftarrow{\mathfrak{g}_w}\mathfrak{1}_w=\overleftarrow{\mathfrak{g}_z}^{-1}\Lambda\overleftarrow{\mathfrak{g}_z\mathfrak{g}_w^{-1}}\overleftarrow{\mathfrak{g}_w}\mathfrak{1}=\overleftarrow{\mathfrak{g}_z}^{-1}\Lambda\overleftarrow{\mathfrak{g}_z}\mathfrak{1}=\mathfrak{1}_z$$