

$${}^\ell\mathbb{K}_\ell \times \mathcal{H}_\ell^{\mathbb{K}} \rightarrow {}^\ell\mathbb{K}_\ell$$

$$\Sigma_\ell^{\mathbb{K}} = \frac{h \in {}^\ell\mathbb{K}_\ell}{\overset{*}{h}h = 1_\ell} = {}^\ell\mathbb{K}_\ell^{\mathcal{U}}$$

$$\nu = \frac{\ell^2 a}{2\ell} = \ell a/2$$

$$\int\limits_{dh}^{{}^\ell\mathbb{K}_\ell^{\mathcal{U}}}\mathfrak{e}^{-2ih|M}=\mathcal{J}_{\ell a/2}\left(\overset{*}{M}M\right)$$

$$\int\limits_{dh}^{{}^\ell\mathbb{K}_\ell^{\mathcal{U}}}\mathfrak{e}^{-2\text{ tr } \zeta h\overset{*}{\omega}}=\zeta\overset{+}{\zeta}\mathcal{J}_{\omega\overset{+}{\omega}}^{\ell a/2}$$

$$\int\limits_{dh}^{{}^\ell\mathbb{K}_\ell^{\mathcal{U}}}\mathfrak{e}^{-2\text{ tr } i(\zeta h)\overset{+}{\omega}}=\int\limits_{dh}^{{}^\ell\mathbb{K}_\ell^{\mathcal{U}}}\mathfrak{e}^{-2i\text{ tr } h|\overset{+}{\zeta}\omega}=\mathcal{J}_{\ell a/2}\left(\overset{*}{\overset{+}{\zeta}\omega}\overset{+}{\zeta}\omega\right)=\mathcal{J}_{\ell a/2}\left(\overset{+}{\omega}\zeta\overset{+}{\zeta}\omega\right)$$