

$$\int_{\downarrow_g}^{G^{\mathbb{R}i}} g\eta = \int_{\downarrow_T}^{T+\Delta^c} \prod_{\tau} \overline{\sin iT|_{\tau}} \int_{\downarrow_{Tg}}^{T \times G^{\mathbb{R}i}} g^{-1} \exp Tg\eta$$