

$$\begin{aligned}
u &\ni \mathbb{T}^r \rightarrow S \ni \sum_j u_j^j e \\
e \ni \gamma &\in \mathbb{T}^r \triangleleft \mathbb{C} \xleftarrow{e \ni \gamma} S \triangleleft \mathbb{C} \ni \gamma \\
e \ni \gamma &= u \cdot e \gamma
\end{aligned}$$

$$\int_{du}^S u \gamma = \frac{\Gamma_{1+a/2}^r}{\Gamma_{1+ra/2}} \int_{\mathbb{T}^r} \frac{dz_j}{2\pi i z_j} \prod_{i < j} \overline{z_i - z_j}^a \sum z_k^{e_k} \gamma$$

$$\int_{du}^S e^{-u \Delta^{-\sigma}} e^{-u \Delta^{\tau}} u \gamma = \frac{\Gamma_{1+a/2}^r}{\Gamma_{1+ra/2}} \frac{(2\pi)^{d-r}}{\Gamma_{-\sigma}^X \Gamma_{\sigma+d/r}^X} \int_{0|1}^1 \prod_j x_j^{-\sigma-d/r} \overline{1-x_j}^{\sigma+\tau} \prod_{i < j} \overline{x_i - x_j}^a \sum x_k^{e_k} \gamma$$