$$\mathbb{R}^{d|1} = \frac{\begin{array}{c|c|c} 1 & x+\xi\xi^{T}/2 & \xi \\ \hline 0 & 1 & 0 \\ \hline 0 & \xi^{T} & 1 \end{array}}{x \in \mathbb{R}^{d}: \quad \xi \in {}^{2^{\ell}}\mathbb{C}}$$

$$\begin{array}{c|c|c} 1 & x+\xi\xi^{T}/2 & \xi \\ \hline 0 & 1 & 0 \\ \hline 0 & \xi^{T} & 1 \end{array} \begin{array}{c|c|c} 1 & y+\eta\eta^{T}/2 & \eta \\ \hline 0 & 1 & 0 \\ \hline 0 & \eta^{T} & 1 \end{array} = \begin{array}{c|c|c} 1 & x+y+(\xi+\eta)(\xi+\eta)^{T}/2 & \xi+\eta \\ \hline 0 & 1 & 0 \\ \hline 0 & (\xi+\eta)^{T} & 1 \end{array}$$

$$\exp \begin{array}{c|c|c} 0 & x & \xi \\ \hline 0 & 0 & 0 \\ \hline 0 & \xi^{T} & 0 \end{array} = \begin{array}{c|c|c} 1 & x+\xi\xi^{T}/2 & \xi \\ \hline 0 & 1 & 0 \\ \hline 0 & \xi^{T} & 1 \end{array}$$

$$\begin{array}{c|c|c} 0 & x & \xi \\ \hline 0 & 0 & 0 \\ \hline 0 & \xi^{T} & 0 \end{array}^{2} = \begin{array}{c|c|c} 0 & \xi\xi^{T} & 0 \\ \hline 0 & 0 & 0 \\ \hline 0 & 0 & 0 \end{array}$$

$$\begin{array}{c|c|c} 0 & \overset{3}{x} & \xi \\ \hline 0 & 0 & 0 \\ \hline 0 & \xi^{T} & 0 \end{array} = \begin{array}{c|c|c} 0 & x & \xi \\ \hline 0 & 0 & 0 \\ \hline 0 & \xi^{T} & 0 \end{array} \begin{array}{c|c|c} 0 & \xi\xi^{T} & 0 \\ \hline 0 & 0 & 0 \\ \hline 0 & 0 & 0 \end{array} = \begin{array}{c|c|c} 0 & 0 & 0 \\ \hline 0 & 0 & 0 \\ \hline 0 & 0 & 0 \end{array}$$

$$\Longrightarrow \ \text{LHS} = \begin{array}{c|c|c} 1 & 0 & 0 \\ \hline 0 & 1 & 0 \\ \hline 0 & 0 & 1 \end{array} + \begin{array}{c|c|c} 0 & x & \xi \\ \hline 0 & 0 & 0 \\ \hline 0 & \xi^{T} & 0 \end{array} + \frac{1}{2} \begin{array}{c|c|c} 0 & \xi\xi^{T} & 0 \\ \hline 0 & 0 & 0 \\ \hline 0 & 0 & 0 \end{array} = \text{RHS}$$

$$\mathbb{R}^{d|1}{}_{\infty}\mathbb{K} \ni {}^{x:\xi}\P = {}^{x}_{+}\P \; {}^{\xi}_{-}\P$$