

$$Z_0 = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} = \frac{Z_1 + Z_2}{2} = \frac{1}{2} \begin{pmatrix} 1 & 1 \\ 1 & 1 \end{pmatrix} + \frac{1}{2} \begin{pmatrix} -1 & 1 \\ 1 & -1 \end{pmatrix}$$