

Ginsparg

$$\begin{array}{c} \tau \\ \alpha\beta \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix} = \sum_n^{\mathbb{Z}} \exp \pi i \left(\underbrace{n + \alpha/2 + \nu}_2 + \underbrace{2n + \alpha}_{2n} \underbrace{\mathbf{k} + \beta/2}_{\mathbf{k}} + \nu \mathbf{k} \right)$$

$$= \sum_n^{\mathbb{Z}} \pi i \left(\underbrace{n + \alpha/2 + \nu}_2 + \underbrace{2n + \alpha}_{2n} \underbrace{\mathbf{k} + \beta/2}_{\mathbf{k}} + \nu \mathbf{k} \right)$$

$$\begin{array}{c} \tau+1 \\ 00 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix} = \begin{array}{c} \tau \\ 01 \end{array} \begin{bmatrix} \nu \\ \nu + \mathbf{k} \end{bmatrix}$$

$$\begin{array}{c} \tau+1 \\ 01 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix} = \begin{array}{c} \tau \\ 00 \end{array} \begin{bmatrix} \nu \\ \nu + \mathbf{k} \end{bmatrix}$$

$$\begin{array}{c} \tau+1 \\ 10 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix} = \sqrt{i} \begin{array}{c} \tau \\ 10 \end{array} \begin{bmatrix} \nu \\ \nu + \mathbf{k} \end{bmatrix}$$

$$\begin{array}{c} \tau+1 \\ 11 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix} = \sqrt{i} \begin{array}{c} \tau \\ 11 \end{array} \begin{bmatrix} \nu \\ \nu + \mathbf{k} \end{bmatrix}$$

$$\begin{array}{c} -1/\tau \\ 00 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix} = \sqrt{-i\tau} \begin{array}{c} \tau \\ 00 \end{array} \begin{bmatrix} \mathbf{k} \\ -\nu \end{bmatrix}$$

$$\begin{array}{c} -1/\tau \\ 01 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix} = \sqrt{-i\tau} \begin{array}{c} \tau \\ 10 \end{array} \begin{bmatrix} \mathbf{k} \\ -\nu \end{bmatrix}$$

$$\begin{array}{c} -1/\tau \\ 10 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix} = \sqrt{-i\tau} \begin{array}{c} \tau \\ 01 \end{array} \begin{bmatrix} \mathbf{k} \\ -\nu \end{bmatrix}$$

$$\begin{array}{c} -1/\tau \\ 11 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix} = -i\sqrt{-i\tau} \begin{array}{c} \tau \\ 11 \end{array} \begin{bmatrix} \mathbf{k} \\ -\nu \end{bmatrix}$$

$$\begin{array}{c} \tau \\ 00 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix}^4 + \begin{array}{c} \tau \\ 11 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix}^4 = \begin{array}{c} \tau \\ 01 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix}^4 + \begin{array}{c} \tau \\ 10 \end{array} \begin{bmatrix} \nu \\ \mathbf{k} \end{bmatrix}^4$$