$$
{}^{\tau}V \;=\; {}^{\tau i L}\mathfrak{e}\, V\, {}^{-\tau i L}\mathfrak{e}
$$

$$
{}^{x}V \;=\; x^{L}\, V\, x^{-L}
$$

$$
L_m \times {}^{x}V \;=\; \underbrace{x^{m+1}\partial_x + m x^m}\, {}^{x}V
$$

$$
{}^{\tau}V \;=\; \overbrace{\exp k^{\mu} \underset{\mu\nu}{\eta} \underbrace{X^{\nu} + X_0^{\nu}\tau}}^{= {}^{\tau}k} \bowtie {}^{\tau}\forall \;=\; {}^{\tau}k \bowtie {}^{\tau}\forall
$$

$$
{}^{x}V \;=\; \overbrace{\exp k^{\mu} \underset{\mu\nu}{\eta} \underbrace{X^{\nu} - {}^{x}\cancel{\mathfrak{e}}\, X_0^{\nu} i}}^{= {}^{x}k} \bowtie {}^{x}\forall \;=\; {}^{x}k \bowtie {}^{x}\forall
$$

$$
V = k \bowtie \forall
$$

$$
x^{L}\, V\, x^{-L} \;=\; \underbrace{x^{H} \bowtie x^{Ł}}\, \underbrace{k \bowtie \forall}\, \underbrace{x^{-H} \bowtie x^{-Ł}} \;=\; \underbrace{x^{H} k x^{-H}} \bowtie \underbrace{x^{Ł} \forall x^{-Ł}}
$$

$$
\text{tachyon}\;\; k^{\mu} \underset{\mu\nu}{\eta} k^{\nu} = 2
$$

$$
(\tau)^{k} \;=\; \mathfrak{e}^{k\cdot Xi}\; \mathfrak{e}^{x}\cancel{\mathfrak{e}}^{k\cdot(P+k/2)} \bowtie \overset{>0}{\underset{n}{\bigotimes}}\; \mathfrak{e}^{x^n k \cdot \overset{*}{\partial}_n}\; \mathfrak{e}^{-x^{-n} k\cdot \partial_n}
$$

$$
{}^{\tau}k \;=\; \underline{{}^{\tau X|ki}\mathfrak{e}} \;=\; \underline{\exp k^{\mu} \underset{\mu\nu}{\eta} \underbrace{X^{\nu} + P^{\nu}\tau}} \bowtie \underbrace{\overbrace{\exp \sum_{n>0}^{1/\sqrt{n}} {}_{<}\imath_n \bowtie k^{\mu} \underset{\mu\nu}{\eta} \overset{*}{\partial}^{\nu\,\tau i}\mathfrak{e}^{n} \bowtie {}_{>}\imath_n}\; \overbrace{\exp - \sum_{n>0}^{1/\sqrt{n}} {}_{<}\imath_n \bowtie k^{\mu} \underset{\mu\nu}{\eta} \partial^{\nu\,-\tau i}\mathfrak{e}^{n} \bowtie {}_{>}\imath_n}}
$$

$$
= {}^{k\cdot Xi}\mathfrak{e}\; x^{k\cdot(P+k/2)} \bowtie \overset{>0}{\underset{n}{\bigotimes}} \overbrace{\exp \underbrace{k^{\mu} \underset{\mu\nu}{\eta} \frac{\overset{*}{\partial}^{\nu}}{\sqrt{n}}{}^{\tau i}\mathfrak{e}^{n}}\; \exp \underbrace{-k^{\mu} \underset{\mu\nu}{\eta} \frac{\partial^{\nu}}{\sqrt{n}}{}^{-\tau i}\mathfrak{e}^{n}}} \;=\; \text{RHS}
$$

$$
x = {}^{\tau i}\mathfrak{e}
$$

$$
{}^{x}k \;=\; \underline{{}^{x X|ki}\mathfrak{e}} \;=\; \underline{\exp k^{\mu} \underset{\mu\nu}{\eta} \underbrace{X^{\nu} - {}^{x}\cancel{\mathfrak{e}}\, P^{\nu} i}} \bowtie \overset{>0}{\underset{n}{\bigotimes}} \underbrace{\overbrace{\exp \sum_{n>0}^{1/\sqrt{n}} k^{\mu} \underset{\mu\nu}{\eta} \overset{*}{\partial}^{\nu} x^{n}}\; \overbrace{\exp - \sum_{n>0}^{1/\sqrt{n}} k^{\mu} \underset{\mu\nu}{\eta} \partial^{\nu} x^{-n}}}
$$

$$
{}^{0}k \;=\; \underline{{}^{0 X|ki}\mathfrak{e}} = \exp k^{\mu} \underset{\mu\nu}{\eta} X^{\nu} \bowtie \overset{>0}{\underset{n}{\bigotimes}} \underbrace{\overbrace{\exp \sum_{n>0} k^{\mu} \underset{\mu\nu}{\eta} \frac{\overset{*}{\partial}^{\nu}}{\sqrt{n}}}\; \overbrace{\exp - \sum_{n>0} k^{\mu} \underset{\mu\nu}{\eta} \frac{\partial^{\nu}}{\sqrt{n}}}}
$$

$$
\text{directon}\;\; k^{\mu} \underset{\mu\nu}{\eta} k^{\nu} \;=\; \zeta^{\mu} \underset{\mu\nu}{\eta} k^{\nu} = 0
$$

$$
{}^{z}\overbrace{k|\zeta} \;=\; \underline{\zeta| dX^{X|ki}\mathfrak{e}} \;=\; \underline{\zeta|\, {}^{z}\overbrace{\partial_{\tau}X}\, {}^{z X|ki}\mathfrak{e}}
$$

$$
\text{unbroken symm}\; n = -1{:}0{:}1
$$

$$
{}^{tL_n}\mathfrak{e}\; {}^{y}V\; y^{n}\; {}^{-tL_n}\mathfrak{e} = {}^{y\cdot g}V\; {}^{y}\underline{g}^{n}
$$

$$
\frac{{}^{y}V}{y} = \overbrace{a - cg \cdot y}^{2}\, \frac{{}^{g\cdot y}V}{g \cdot y}
$$