

$$\mathfrak{t} = \mathbb{R}^{1:d} i$$

$$\sigma\equiv 0|\ell$$

$${}^{0:\tau}X^\mu={}^{\ell:\tau}X^\mu$$

$$\begin{matrix}0|\ell\\ \bowtie_\infty \mathfrak{t}^{\mathbb{C}}\boxtimes \mathbb{R}\end{matrix}\xrightarrow[\substack{\sigma(\tau)^\mu\\ 0}]{\sigma(\tau)^\mu}\mathbb{R}$$

$${}^{0|\ell}\!\!\times\!\!\mathbb{R}\!\!\bowtie_\infty\!\! \mathbb{R}^{1:d}\ni{}^{\sigma\tau}X$$

$$\begin{aligned}S\left(X\right)&=-\frac{1}{4\pi\alpha'}\int\limits_{d\sigma}^{0|\ell}\int\limits_{d\tau}\sqrt{-\gamma}\overset{\alpha\beta}{\gamma}\partial_{\alpha}X^{\mu}\overset{\eta}{\underset{\mu\nu}{\eta}}\partial_{\beta}X^{\nu}\\{}^{\sigma\tau}\widehat{\mathcal{L}\left(X\right)}&=-\frac{1}{4\pi\alpha'}\overset{\tau\sigma}{\widehat{\partial_{\alpha}X^{\mu}}}\overset{\alpha\beta}{\eta}\overset{\eta}{\underset{\mu\nu}{\eta}}\overset{\tau\sigma}{\widehat{\partial_{\beta}X^{\nu}}}\\{}^{\tau\sigma}\widehat{\mathcal{L}\left(X\right)}&=-\frac{1}{4\pi\alpha'}\overset{\tau\sigma}{\alpha X^{\mu}}\overset{\alpha\beta}{\eta}\overset{\eta}{\underset{\mu\nu}{\eta}}\overset{\tau\sigma}{\beta X^{\nu}}\end{aligned}$$

$$4\pi\alpha'\overset{\sigma}{\widehat{\mathcal{L}\left(\tau\right)}}=-\overset{\sigma}{\alpha}(\tau)^{\mu}\overset{\alpha\beta}{\eta}\overset{\sigma}{\eta}_{\beta}(\tau)^{\nu}=\overset{\sigma}{0}(\tau)^{\mu}\overset{\sigma}{\eta}_{\mu\nu}\overset{\sigma}{0}(\tau)^{\nu}-\overset{\sigma}{1}(\tau)^{\mu}\overset{\sigma}{\eta}_{\mu\nu}\overset{\sigma}{1}(\tau)^{\nu}=\overset{\varrho}{0}(\tau)^{\mu}\overset{\varrho\sigma}{\eta}_{\mu\nu}\overset{\sigma}{\delta}\overset{\sigma}{0}(\tau)^{\nu}-\overset{\varrho}{1}(\tau)^{\mu}\overset{\varrho\sigma}{\eta}_{\mu\nu}\overset{\sigma}{\delta}\overset{\sigma}{1}(\tau)^{\nu}$$

$$\overset{\varrho}{0}(\tau)^{\mu}\,\boldsymbol{\times}\,\overset{\sigma}{(\tau)}^{\nu}=-2\pi i\,\alpha'\,\overset{\mu\nu}{\eta}\overset{\varrho\sigma}{\delta}$$

$$\overset{\mu}{_0}(\tau)_{\varrho}=\frac{\partial\mathcal{L}}{\partial\overset{\varrho}{_0}(\tau)^{\mu}}=\frac{1}{2\pi\alpha'}\overset{\mu\nu}{\eta}_0\overset{\sigma}{(\tau)}^{\nu}\overset{\varrho}{\delta}$$

$$\overset{i}{_\mu}(\tau)_{\varrho}\,\boldsymbol{\times}\,\overset{\sigma}{(\tau)}^{\nu}=\overset{\sigma}{_\mu}\overset{\nu}{\delta}_{\varrho}$$