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

$$\sigma \in 0|\ell$$

$${}^{0:\tau}_{1}X^{\mu} = 0 = {}^{\ell:\tau}_{1}X^{\mu}$$

$$0|\ell \underset{\infty}{\trianglerighteq} \mathfrak{t}^{\mathbb{C}} \ltimes \mathbb{R} \xrightarrow[{}^{\sigma}_{0}(\tau)^{\mu}]{{}^{\sigma}(\tau)^{\mu}} \mathbb{R}$$

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

$$S(X) = -\frac{1}{4\pi\alpha'} \int_{d\sigma}^{0|\ell} \int_{d\tau} \sqrt{-\gamma}\, \overset{\alpha\beta}{\gamma}\, \partial_{\alpha} X^{\mu} \underset{\mu\nu}{\eta}\, \partial_{\beta} X^{\nu}$$

$${}^{\sigma\tau}\overbrace{\mathcal{L}(X)} = -\frac{1}{4\pi\alpha'}\, {}^{\tau\sigma}\overbrace{\partial_{\alpha}X^{\mu}}\, \overset{\alpha\beta}{\eta} \underset{\mu\nu}{\eta}\, {}^{\tau\sigma}\overbrace{\partial_{\beta}X^{\nu}}$$

$${}^{\tau\sigma}\overbrace{\mathcal{L}(X)} = -\frac{1}{4\pi\alpha'}\, {}^{\tau\sigma}_{\alpha}X^{\mu}\, \overset{\alpha\beta}{\eta} \underset{\mu\nu}{\eta}\, {}^{\tau\sigma}_{\beta}X^{\nu}$$

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

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

$${}_{\mu}(\tau)_{\varrho} = \frac{\partial\mathcal{L}}{\partial^{\varrho}_{0}(\tau)^{\mu}} = \frac{1}{2\pi\alpha'} \underset{\mu\nu}{\eta}\, {}^{\sigma}_{0}(\tau)^{\nu} \underset{\sigma\varrho}{\delta}$$

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