

9 spatial coordinates of N D0-branes

$$\mathbb{R} \xrightarrow{X^\mu} {}^N\mathbb{C}_N^9$$

$$\mathcal{L} = \text{tr} \partial_t X^\mu \eta_{\mu\nu} \partial_t X^\nu + 2\bar{\vartheta} \partial_t \vartheta + \frac{1}{2} \text{tr} X^\mu \star X^\nu - 2\bar{\vartheta} \Gamma^\mu \eta_{\mu\nu} \vartheta \star X^\nu$$

$$H = \text{Tr} \frac{1}{2} \overline{X^i} \overline{X^i} - \frac{1}{4} \underbrace{X^i \star X^j}_{\text{}} \underbrace{X^i \star X^j}_{\text{}} + \frac{1}{2} \bar{\psi} \gamma_i \underbrace{X^i \star \psi}_{\text{}}$$