

$k = 1$: IIA sugra

Witten

$$-\begin{Bmatrix} \mathbb{1} \mathbb{Q} \mathbb{Q} \mathbb{Q} \\ \mathcal{X} \mathcal{Z} \end{Bmatrix} = \mathbb{Q}^{-2} \left(-\boxed{\mathbb{1} \mathbb{Q}} - \overline{\mathbb{Q}/\mathbb{Q}}^2 + \overline{\mathbb{Q}}^2 \right) + \left(\overline{\mathcal{X}}^2 + \overline{\mathcal{Z}}^2 + \overline{\mathcal{X} \wedge \mathcal{Z}}^2 \right) + \underline{\mathcal{Z}} \wedge \underline{\mathcal{Z}} \wedge \underline{\mathcal{Z}}$$

$$-\begin{Bmatrix} \mathbb{1} \mathbb{Q} \\ \mathcal{X} \mathcal{Z} \mathcal{Z} \end{Bmatrix} = -\boxed{\mathbb{1} \mathbb{Q}} + \overline{\mathbb{Q}}^2 + H e^{-3\mathbb{Q}/2} \overline{\mathcal{X}}^2 + e^{\mathbb{Q}} \overline{\mathcal{Z}}^2 + e^{-\mathbb{Q}/2} \overline{\mathcal{Z} - \mathcal{Z} \mathcal{X}}^2 + \underline{\mathcal{Z}} \underline{\mathcal{Z}}$$