Johansen

$$\text{ell K3}: \quad 2^0_{\mathbb{C}} = 1^0_{\mathbb{C}} \times 1_{\mathbb{C}} = 1^0_{\mathbb{C}} \times \mathbb{P}^1$$

$$y^2 = x^2 + {}^z f\, x + {}^z g = \left(x - {}^z_1 e\right)\left(x - {}^z_2 e\right)\left(x - {}^z_3 e\right)$$

$${}^z \Delta = \overbrace{{}^z_3 e - {}^z_1 e}^{2}\ \overbrace{{}^z_3 e - {}^z_2 e}^{2}\ \overbrace{{}^z_2 e - {}^z_3 e}^{2}$$

$$\deg {}^z \Delta = 24 \Longrightarrow 0_{\mathbb{C}} = \frac{z \in \mathbb{P}}{{}^z \Delta = 0} = 24$$

$$\text{F} \ / 2^0_{\mathbb{C}} = \ \text{IIB} \ / \mathbb{P}^1 = 7{:}\ddagger{:}1_{\mathbb{C}} \supset 7{:}\ddagger{:}0_{\mathbb{C}} = D^7_{1:0}$$

$$L^{\mathbb{Z}}_2 \ltimes \mathbb{P} \Longrightarrow D^7_{p:q}$$

$$j\left(\tau\left(z\right)\right) = \frac{{}^z f^3}{{}^z \Delta}$$

$$\text{mg source non-trivial cl IIB-background } \tau\left(z\right) = {}^z \not{\alpha} + i\, \mathfrak{e}^{-{}^z \not{\alpha}}$$

$$\text{multi } D^7_{p:q} \Longrightarrow U^{\mathbb{C}}_N \text{ gauge field on } D^7_{p:q}$$

$$H^{\mathbb{Z}}_{2:0}\left(2^0_{\mathbb{C}}\right) \ni 1_{\mathbb{C}} \text{ hol 2-cycle}$$

$$1^0_{\mathbb{C}} = 1^0_{\mathbb{R}} \times 1_{\mathbb{R}} \text{ sizeless}$$

$$1_{\mathbb{R}} = \underset{\sim}{1}^0_C \text{ base projection}$$

$$\text{geom gauge } = \text{ solitonic states/zero hol 2-cycles}$$

$$\text{open string } G^1_{p:q} = 0{:}\ddagger{:}\underset{\sim}{1}^0_{\mathbb{C}} \text{ ends on } 7{:}\ddagger{:}0_{\mathbb{C}} = D^7_{p:q}$$