Lerche

H/T2

$$\mathbb{R}^{8|16} \begin{cases} D = 8 \\ Q = 16 \end{cases}$$

(H/T2) $\ni T{:}U$

$T = \mathbb{T}^2$ Kahler moduli

$U = \mathbb{T}^2$ complex moduli

BPS-amplitudes=4 external gauge bosons F

coupling cst ξ: even $i\xi_{T{:}U} F^n$

theta angle Θ: odd $\dfrac{\Theta_{T{:}U}}{2\pi} F \wedge \cdots \wedge F$

field strength super-partners $F_U{:}F_T$

eff threshold coupling $\Delta_{T{:}U}^{\text{eff}} = i\xi_{T{:}U} + \dfrac{\Theta_{T{:}U}}{2\pi}$

het elliptic genus=Ramond partition function gauged background $\hat{A}(q{:}F) = \text{tr}_R (-1)^{J_0} q^{L_0} \mathfrak{e}^F$

eff string action 1-loop corrections

partition $^\tau Z_{T{:}U} = \sum_{p_R}^{p_L} \exp \dfrac{\pi i}{2T_2 U_2} \overline{m_1 + m_2 U + n_1 T + n_2 TU}^2 \exp \dfrac{\pi i}{2T_2 U_2} \overline{m_1 + m_2 U + n_1 T + n_2 TU}^2$

$$p_L = m_1 + m_2 U + n_1 T + n_2 TU$$

$$p_R = m_1 + m_2 U + n_1 \bar{T} + n_2 \bar{T} U$$

coupling $\Delta_{T{:}U}^{\text{eff}} = \int \dfrac{d\tau}{\tau_2} \,^\tau Z_{T{:}U} \;\text{str}\; \exp 2\pi i L_0 \,\mathfrak{e}^F$