Sugiyama

$$\text{Spin}_7 \text{ holonomy} \implies \text{conf algebra}$$

$$\text{holonomy reduction } \text{SO}_8 / \text{Spin}_7 = \begin{cases} \text{Ising-model conf alg} \\ \text{Virasoro cc } \dfrac{7}{10} \\ \text{s-stress tensor } \left(T^{3I} {:} G^{3I} \right) \end{cases}$$

$$\text{internal } 8^0_{\mathbb{R}}: \quad \text{Spin}_7 \text{ holonomy}$$

$$H^*_{\mathbb{R}} \left(8^0_{\mathbb{R}} \right) = 1|0| \, b_2 \,|\, b_3 \,|\, b_4^{\pm} \,|\, b_3 \,|\, b_2 \,|0|1$$

$$b_3 - b_2 + b_4^+ - 2 b_4^- - 1 = 24$$

$$\frac{\chi}{2} = b_2 - b_3 + 3b + 1$$

$$\text{point moduli } \left(8^0_{\mathbb{R}} \right)_{\text{geom}} = 1 + b_4^+ : \quad \cancel{\chi} \text{ closed self-dual 4-form } \text{Spin}_7 \text{ inv}$$

$$8^0_{\mathbb{R}} \text{ sigma model conf algebra } \begin{cases} (T{:}G) & \text{s-stress tensor N=1 s-conf currents} \\ (K{:}\cancel{A}) & \text{current spin } (2{:}3/2) \end{cases}$$

$$\text{string moduli } \left(8^0_{\mathbb{R}} \right)_{\text{CFT}} = 1 + b_2 + b_4^+ : \quad \cancel{\chi} {:} \cancel{\chi}$$