

singular geom  $\Rightarrow$  chiral matter/spiral forces

$$\begin{cases} D4 \\ N1 \end{cases} = M / 7_{\mathbb{R}}^0$$

$$\begin{cases} D3 \\ N1 \end{cases} = M / 8_{\mathbb{R}}^0$$

strongly coupled gauge  $\Rightarrow$   $\begin{cases} \text{confine} \\ \text{mass gap} \\ \text{phase trans} \end{cases}$

$$4_{\mathbb{C}}^0 = 1_{\mathbb{C}}^0 \times 3_{\mathbb{C}} \text{ F background}$$

$$7_{\mathbb{R}}^0 = 1_{\mathbb{H}}^0 \times 3_{\mathbb{R}} \text{ M background} \Rightarrow \text{geom sing}$$

$$3_{\mathbb{C}}^0 = 3_{\mathbb{R}}^0 \times 3_{\mathbb{R}} \text{ H background} \Rightarrow \begin{cases} \text{herm YM connex A on } 3_{\mathbb{C}}^0 \\ \text{chiral fermions=massless modes } \mathcal{D}_A \end{cases}$$