

Witten

YM holography

Stokes

$$\text{AdS}^- \int \text{YM} = \text{AdS} \int \text{YM}^+$$

$$\text{YM}^+ = \text{IIB}$$

$$\text{IIB} / \mathbb{S}_5^N \times \text{AdS}_5 \sim \text{YM}^N / \partial \text{AdS}_5$$

$$R = \ell_s \left(g_s N \right)^{1/4}$$

$$\text{YM} \left\{ \begin{array}{l} \mathcal{N} \\ \text{AdS}_5^- \text{ bdry} \end{array} \right. \quad \text{SU}_N \quad g_{\text{YM}} \text{ coupling} \quad \sim \quad \text{IIB} \left\{ \begin{array}{l} X \quad N \text{ flux} \\ \text{AdS}_5 \quad R \text{ radius} \end{array} \right.$$

$$\text{YM} \left\{ \begin{array}{l} \mathcal{N} = 4 \text{ max} \\ \text{AdS}_5^- \text{ bdry} \end{array} \right. \quad \text{SU}_N \quad g_{\text{YM}} \text{ coupling} \quad \sim \quad \text{IIB} \left\{ \begin{array}{l} \mathbb{S}^5 \quad N \text{ flux} \\ \text{AdS}_5 \quad R \text{ radius} \end{array} \right.$$

$$R^4 = g_{\text{YM}}^2 N$$