

## AdS/CFT correspondence (Maldacena 1997)

$\text{II}_B$ superstring on $AdS_5 \times S^5$	$\equiv$	$\mathcal{N} = 4$ D=4 $SU(N)$ SYM
$\frac{R^2}{\alpha'} \int \frac{d\tau d\sigma}{4\pi} (\partial_a X^M \partial^a X_M + \partial_a Y^M \partial^a Y_M) + \dots$	$\equiv$	$\frac{2}{g_{YM}} \int d^4x \text{Tr} \left[ -\frac{1}{4} F^2 - \frac{1}{2} (D\Phi)^2 + i\bar{\Psi}\not{D}\Psi + V \right]$

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Couplings: $\sqrt{\lambda} = \frac{R^2}{\alpha'}$ , $g_s = \frac{\lambda}{N}$ String spectrum $E(\lambda)$ Minimal surface $g_{ab}$	strong $\leftrightarrow$ weak	$\lambda = g_{YM}^2 N$ , $N$ Anomalous dim $\Delta(\lambda)$ Scattering amplitudes=Wilson loops $\langle T_{\mu\nu} \rangle$ hidro
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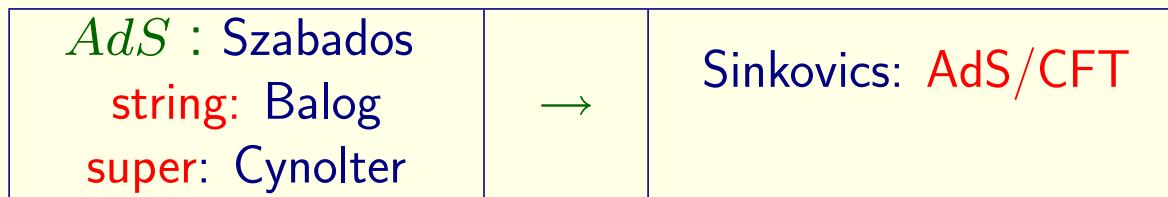
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### Plan of the school



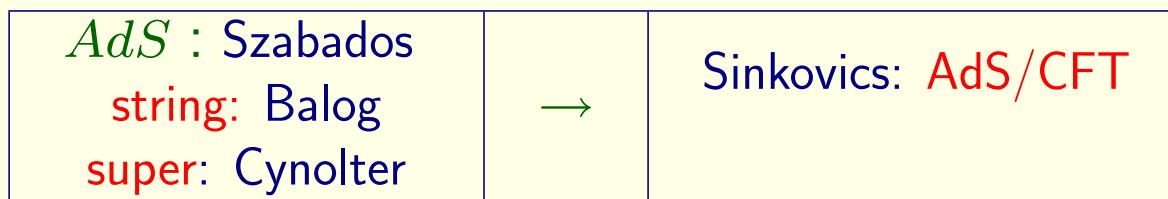
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Jevicky: classical strings Balog: giant magnon Palla: symmetries	anomalous dimension planar: integrability Ahn: S-matrix $\rightarrow$ Bethe Ansatz	Hegedűs: gauge theory, magnon 
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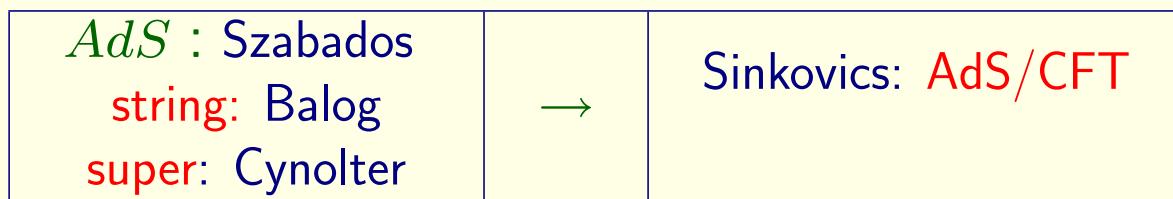
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Jevicky: minimal surfaces	scattering amplitudes	Bajnok: 4 gluon, Wilson loops
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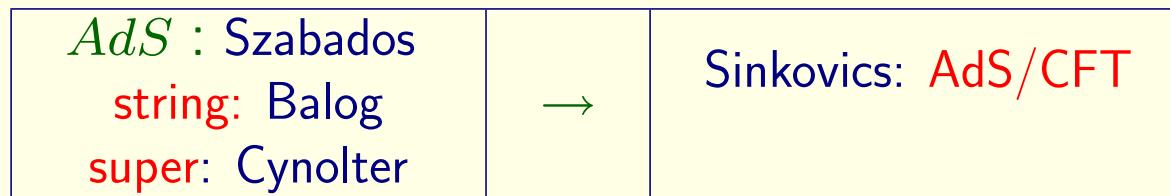
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RHIC, LHC: Csörgő, Barnaföldi, Regős: Hydro	AdShydro $\langle T_{\mu\nu} \rangle$	Bajnok: $g_{ab}$

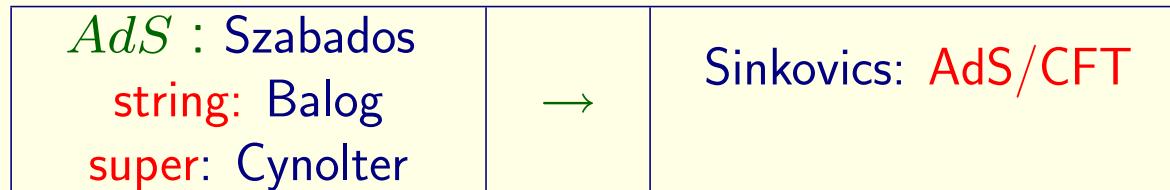
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Kormos	appl. to cond mat:	
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