Title: String Theory Course Q&A

Speakers:

Collection/Series: String Theory Course

Date: May 29, 2025 - 9:00 AM

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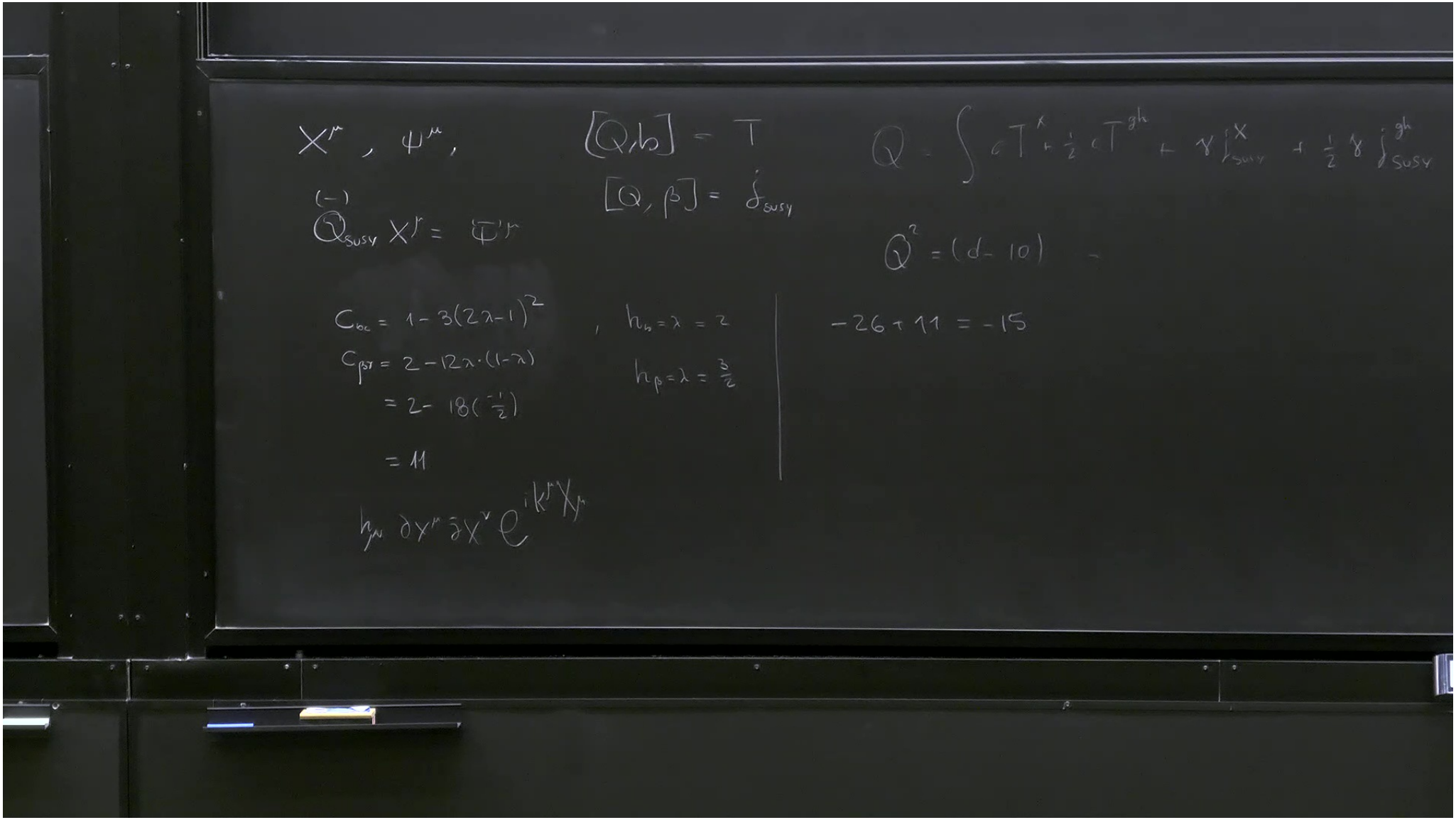
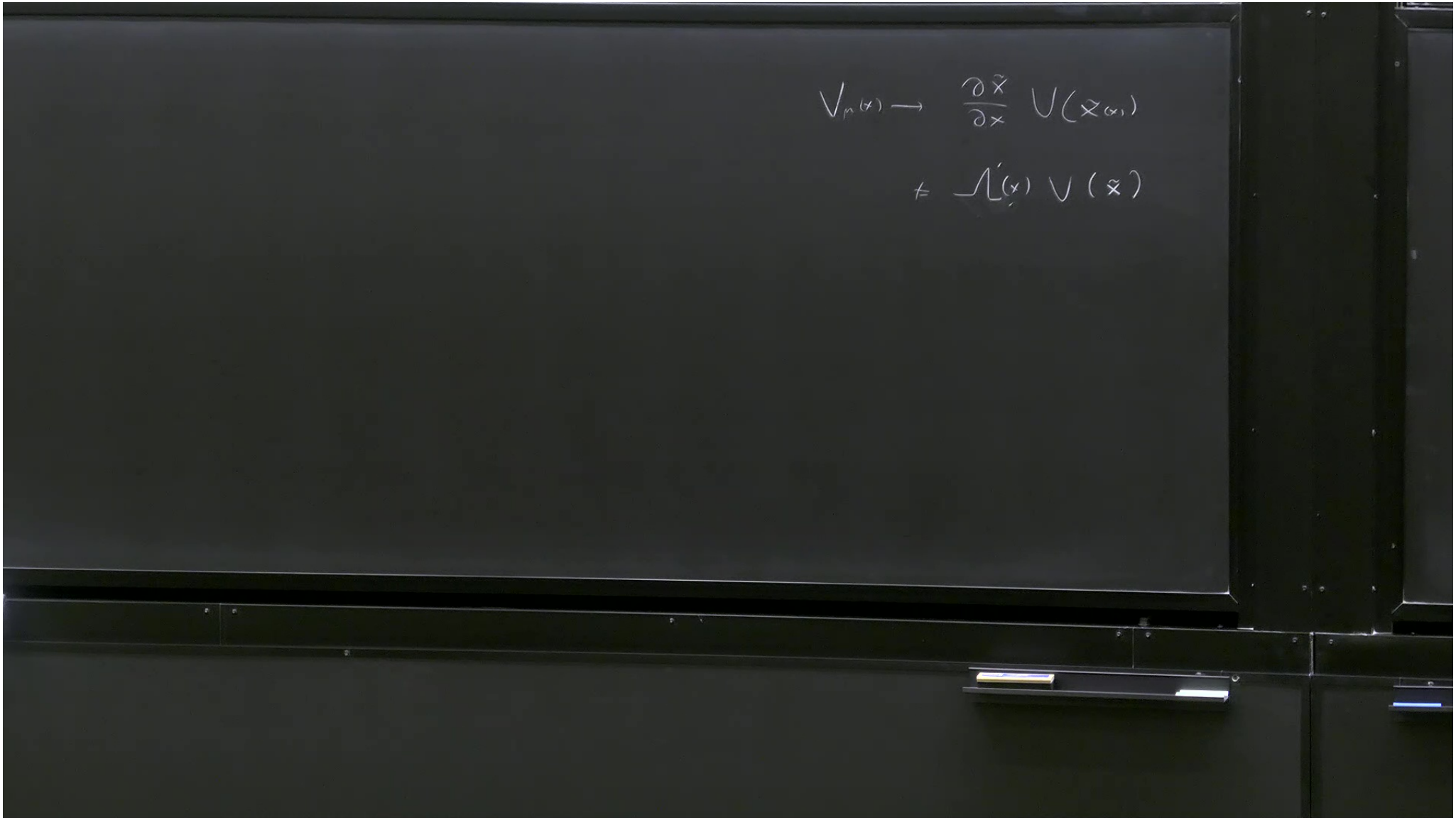
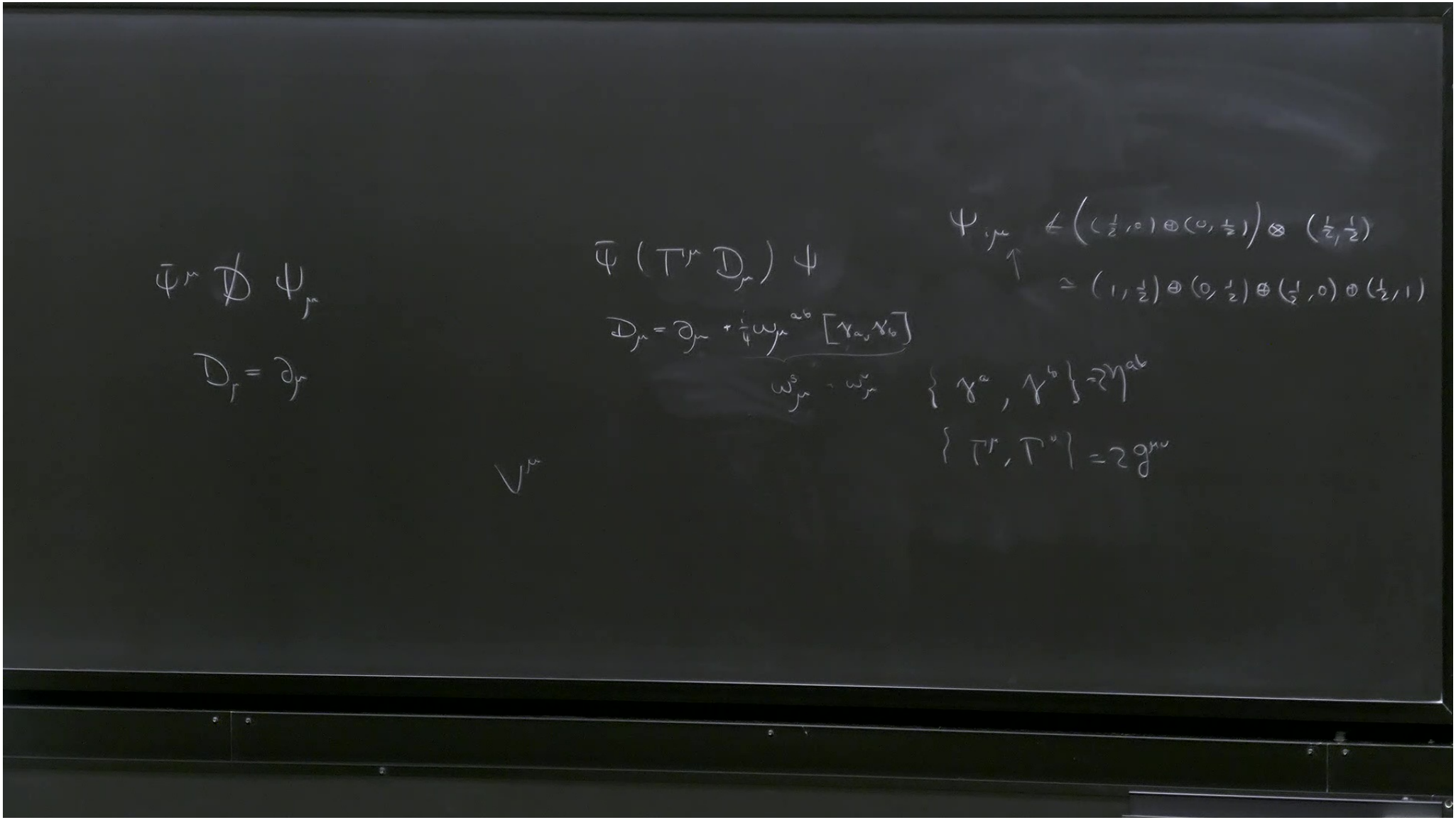
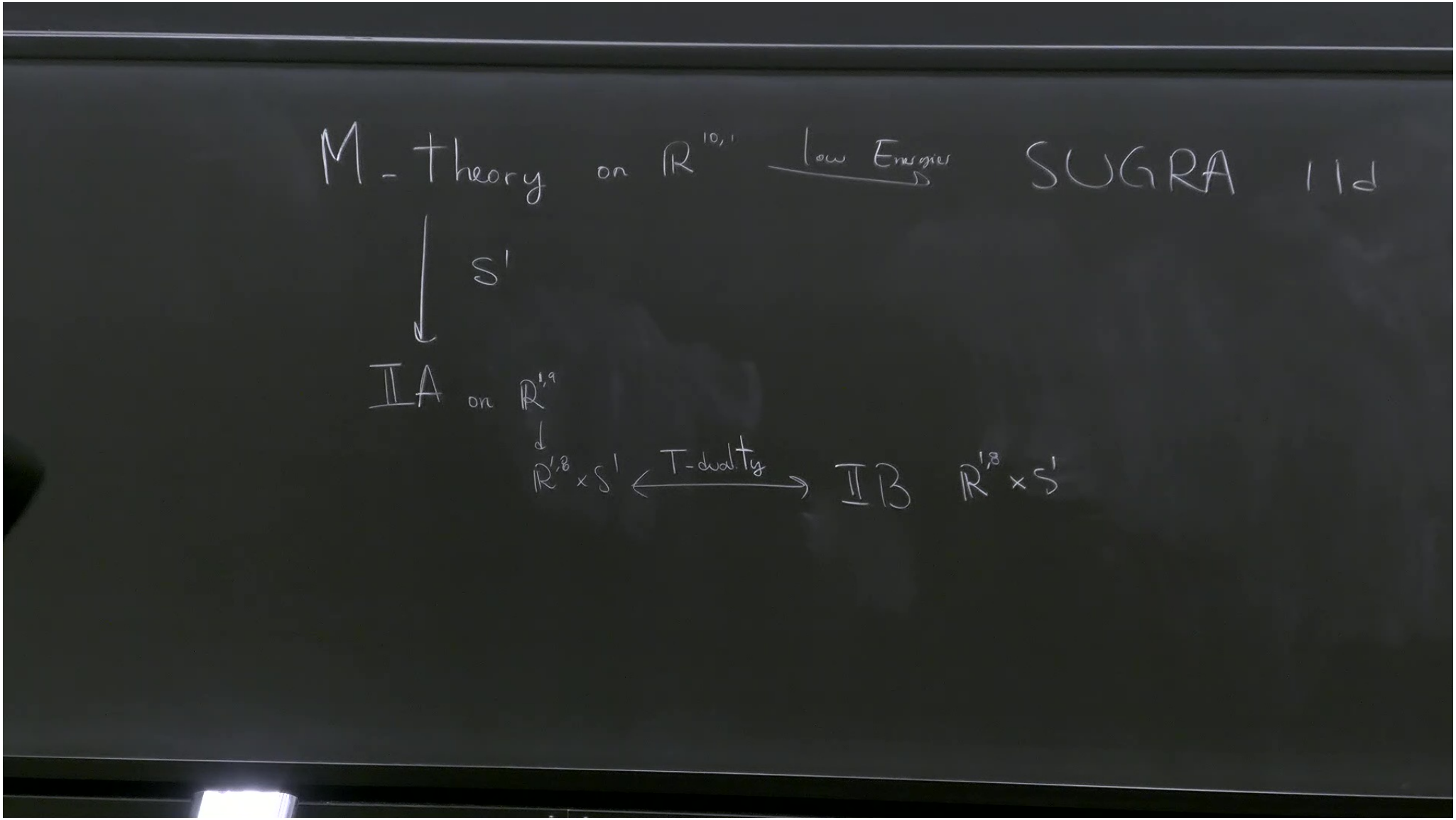

X^μ, ψ^μ,
$[Q,b] = T$
$[Q,\beta] = \delta_{susy}$
$Q = \oint cT^X + \frac{1}{2} cT^{gh} + \gamma j^X_{susy} + \frac{1}{2}\gamma j^{gh}_{susy}$
$Q^{(-1)}_{susy} X^\mu = \psi^\mu$
$Q^2 = (d-10)$
$c_{bc} = 1 - 3(2\lambda-1)^2$, $h_b = \lambda = 2$
$c_{\beta\gamma} = 2 - 12\lambda\cdot(1-\lambda)$
$h_\beta = \lambda = \frac{3}{2}$
$= 2 - 18(\frac{1}{4})$
$= 11$
$-26 + 11 = -15$
$h_\mu \partial X^\mu \partial X^\nu e^{ik^\mu X_\mu}$


$V_n(x) \longrightarrow \frac{\partial \tilde{x}}{\partial x} V(\tilde{x}(x))$
$+ \mathcal{L}(x) V(\tilde{x})$


$\bar{\psi}^\mu \not{D} \psi_\mu$
$D_\mu = \partial_\mu$
$\bar{\psi}(\Gamma^\mu D_\mu)\psi$
$D_\mu = \partial_\mu + \frac{1}{4}\omega_\mu^{ab}[\gamma_a, \gamma_b]$
$\omega^a_\mu \cdot \omega^a_\mu$
V^μ
$\psi_\mu \in \left(\left(\frac{1}{2},0\right)\oplus\left(0,\frac{1}{2}\right)\right)\otimes\left(\frac{1}{2},\frac{1}{2}\right)$
$= \left(1,\frac{1}{2}\right)\oplus\left(0,\frac{1}{2}\right)\oplus\left(\frac{1}{2},0\right)\oplus\left(\frac{1}{2},1\right)$
$\{\gamma^a, \gamma^b\} = 2\eta^{ab}$
$\{\Gamma^\mu, \Gamma^\nu\} = 2g^{\mu\nu}$


M-theory on $\mathbb{R}^{10,1}$
low Energies
SUGRA 11d
S^1
IIA on $\mathbb{R}^{1,9}$
$\mathbb{R}^{1,8} \times S^1$
T-duality
IIB $\mathbb{R}^{1,8} \times S^1$