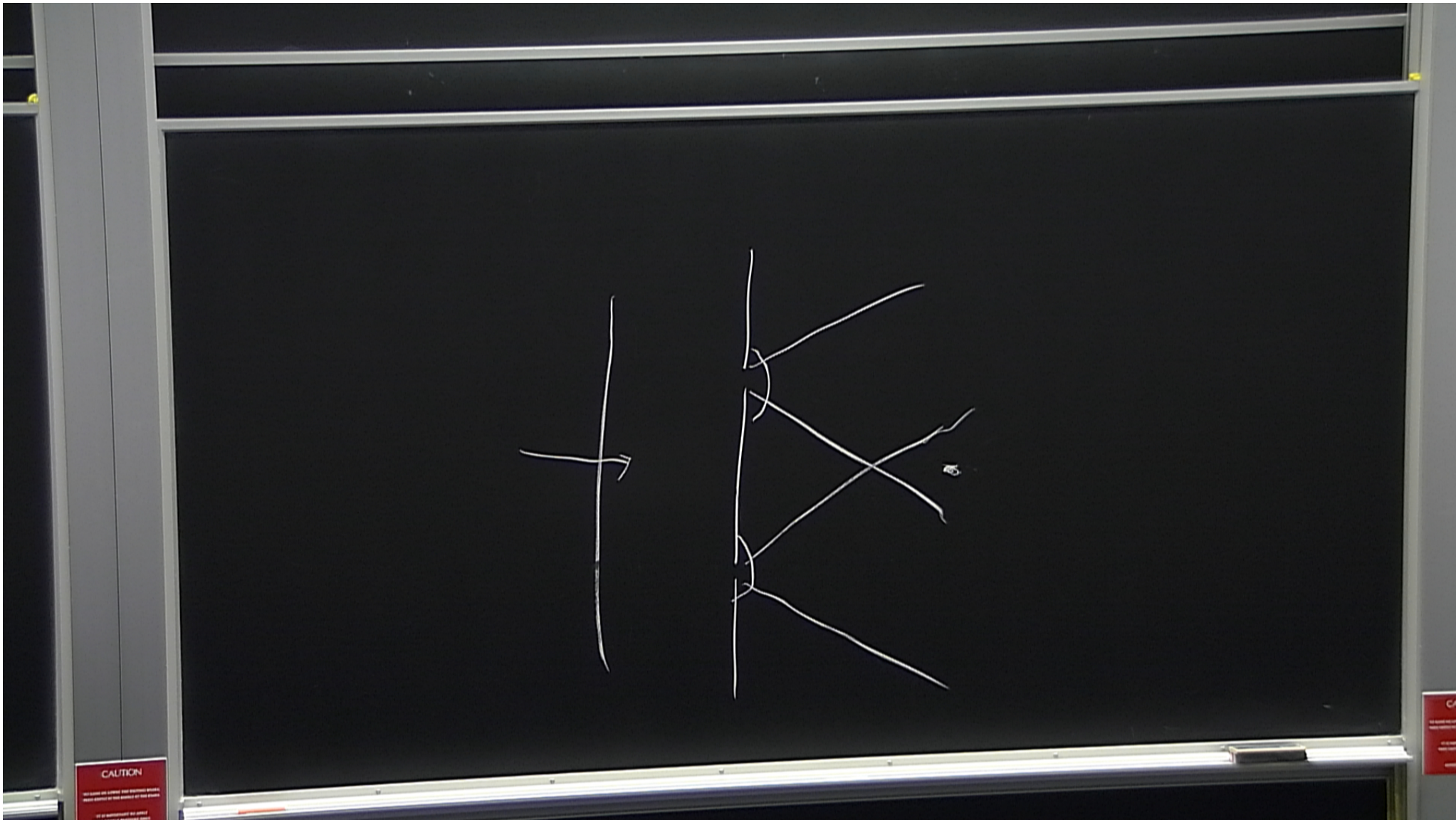


Title: Finally making sense of Quantum Mechanics, part 1

Date: Jun 20, 2016 09:10 AM

URL: <http://pirsa.org/16060033>

Abstract:

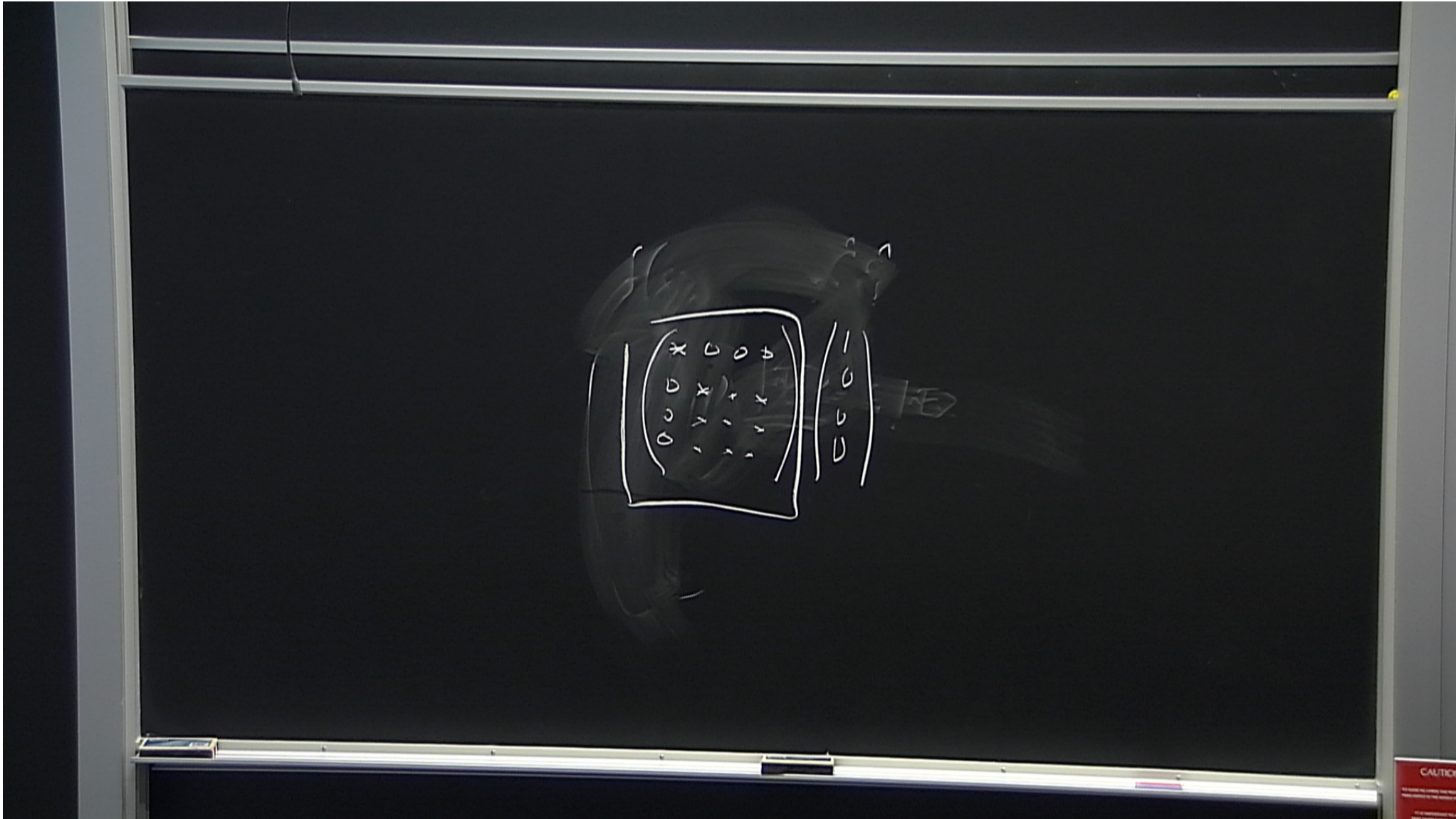


$$f(x, y)$$

$$f(x, y) \underline{\underline{|\mathcal{E}|}} = f, |\mathcal{E}|$$

$$f(x, p) \quad f_1 f_2$$

$$\int f(x, p) \underline{\underline{|\mathcal{E}\rangle}} = f_1 |\mathcal{E}\rangle$$



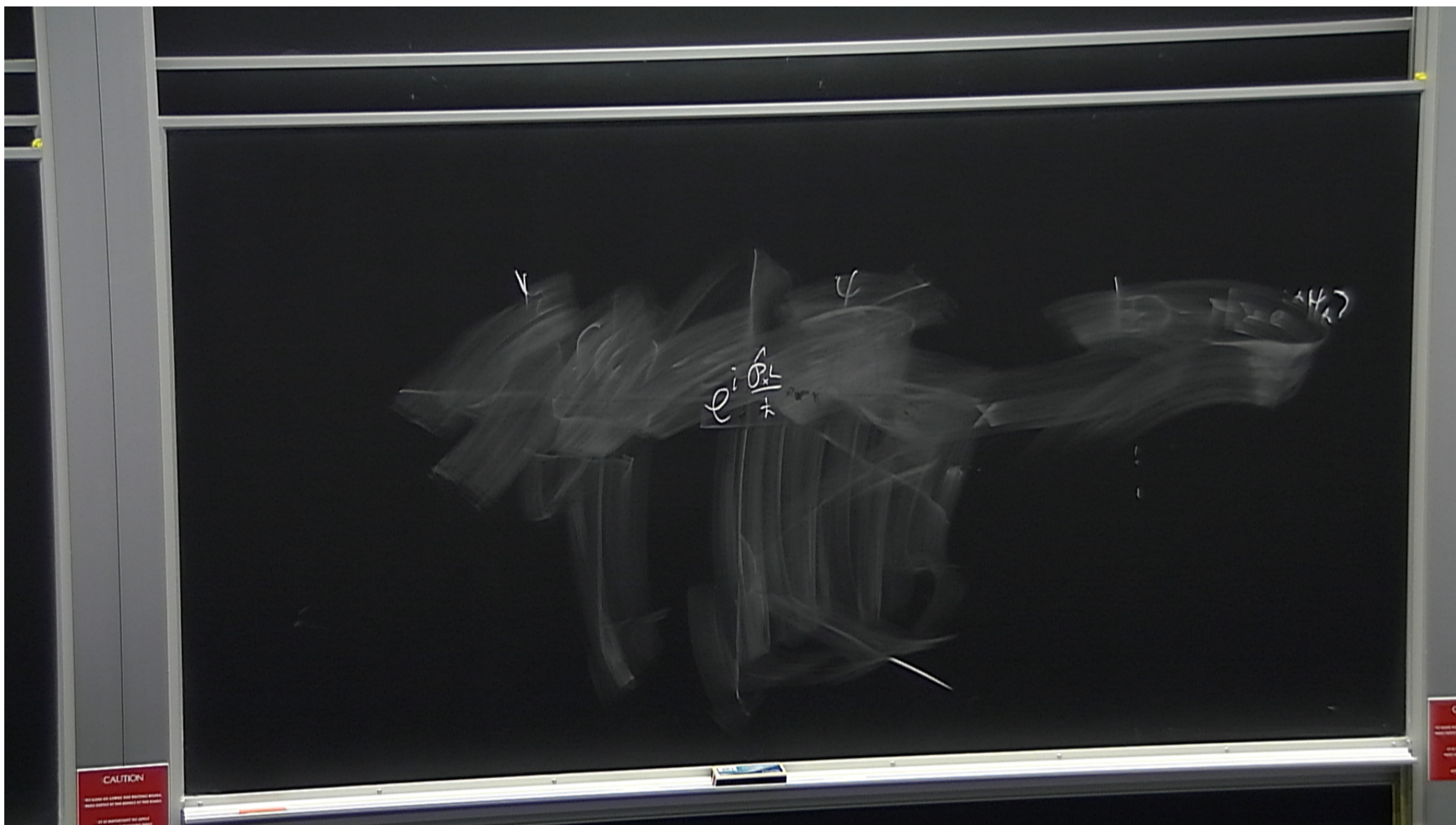
$$f(\hat{x}, \hat{p}) = \sum a_{nm} \hat{x}^n \hat{p}^m$$

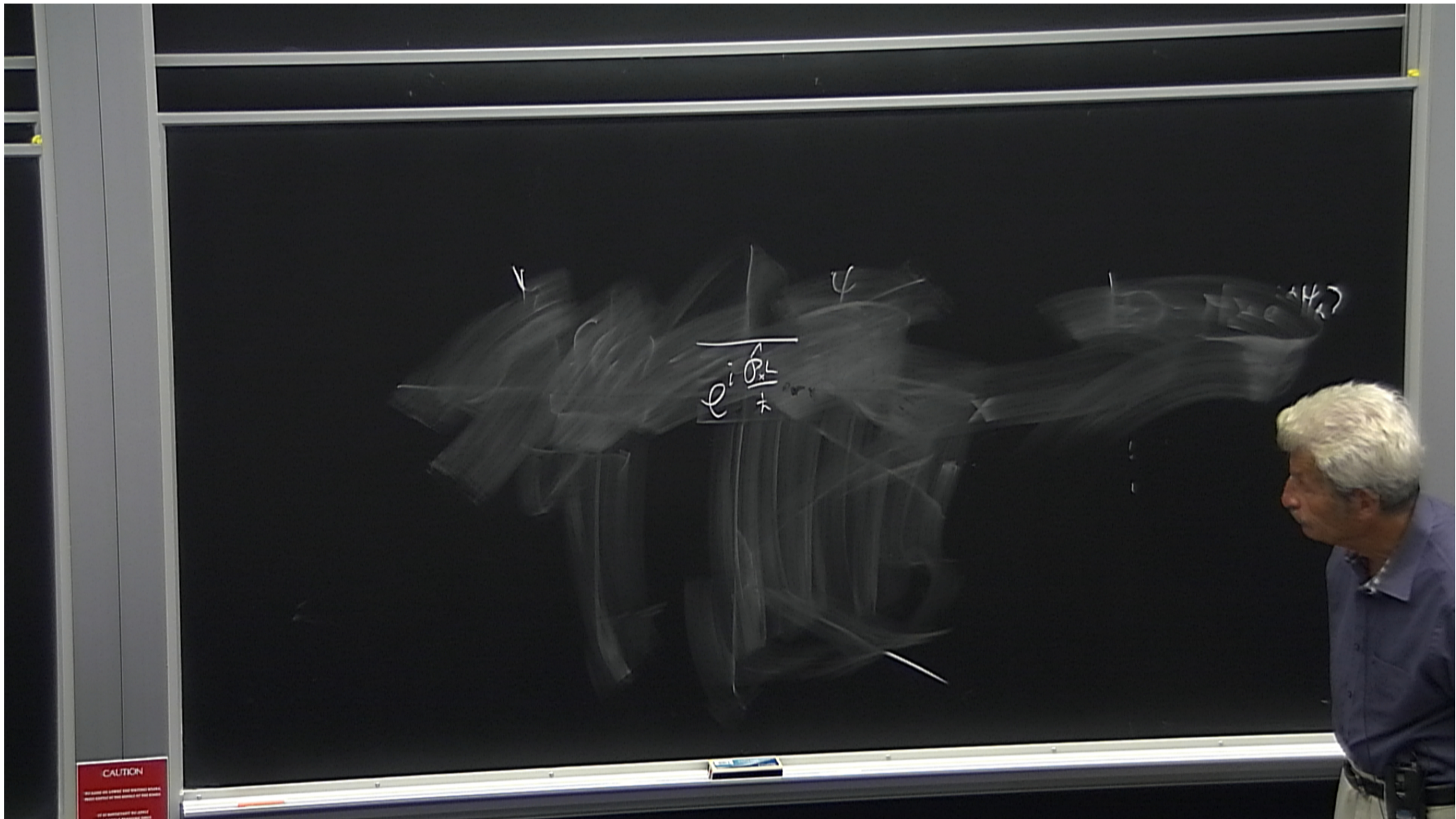
$$|E_\alpha\rangle = \frac{H_0 e^{i\alpha H_0}}{\sqrt{v_\alpha}}$$

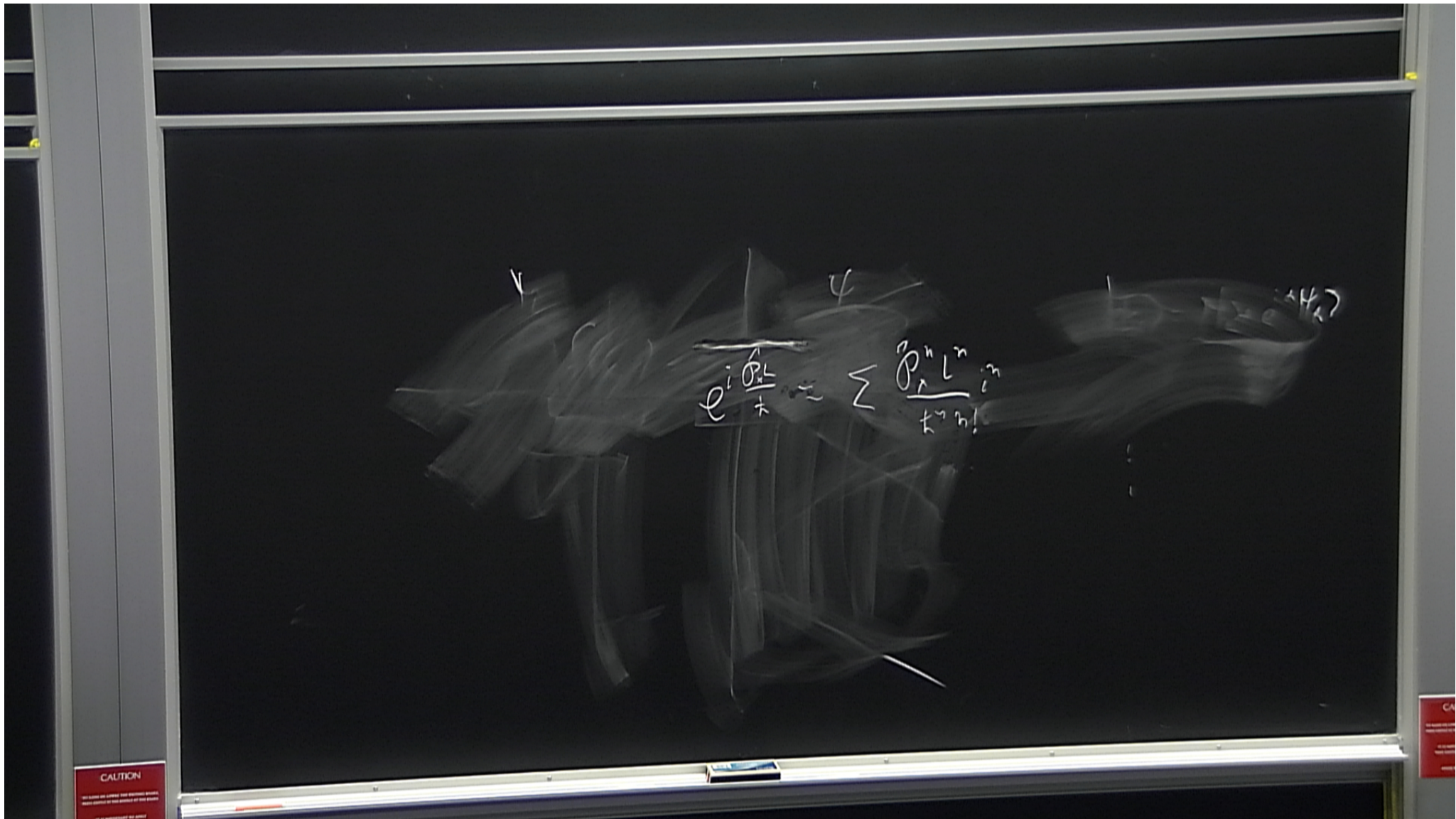
$$-i \int \left(\psi_1^*(x) + \psi_2^*(x) e^{-i\gamma} \right) X^n \frac{\partial^2}{\partial x^2} \left(\psi_1(x) + e^{i\gamma} \psi_2(x) \right) dx$$



$$-i \int \left(\psi_1^*(x) + \psi_2^*(x) e^{-i\phi} \right) X^n \frac{\partial^2}{\partial x^2} \left(\psi_1(x) + e^{i\phi} \psi_2(x) \right) dx$$







$$\psi(x)$$

$$|\psi\rangle = \int \varphi(p) |p\rangle$$

$$e^{i\frac{\hat{p} \cdot \hat{L}}{\hbar}} = \sum \frac{\hat{p}^n \hat{L}^n}{\hbar^n n!}$$

$$\dot{x} = \frac{\partial H}{\partial p_x}$$

$$\dot{p}_x = -\frac{\partial H}{\partial x}$$

$\left[\begin{matrix} f \\ H \end{matrix} \right]_{\text{PB}}$

↓

$$\frac{d}{dt} f(x, p_x) = \frac{\partial f}{\partial x} \frac{\partial H}{\partial p} - \frac{\partial f}{\partial p} \frac{\partial H}{\partial x}$$

$$\dot{X} = \frac{\partial H}{\partial p_x}$$

$$\dot{p}_x = -\frac{\partial H}{\partial x}$$

$$i\hbar \frac{d\hat{f}}{dt} =$$

$$[\hat{f}(x, p), H(x, p)]$$

$$[\hat{f}, H]_{PB}$$

$$\dot{X} = \frac{\partial H}{\partial p_x}$$

$$\dot{p}_x = -\frac{\partial H}{\partial x}$$

$$i\hbar \frac{d\hat{f}}{dt} =$$

$$[\hat{f}(x, p), H(x, p)]$$

$$H = \frac{p^2}{2m} + V(x)$$

$$\dot{x}, \dot{p}$$

$$[\hat{f}, \hat{H}]_{PB}$$

$$\dot{X} = \frac{\partial H}{\partial p_x}$$

$$\dot{p}_x = -\frac{\partial H}{\partial x}$$

$$i\hbar \frac{d\hat{f}}{dt} =$$

$$[\hat{f}(x, p), H(x, p)]$$

$$[\hat{f}, \hat{H}]$$

$$\left(\frac{p}{p_0} \right)$$