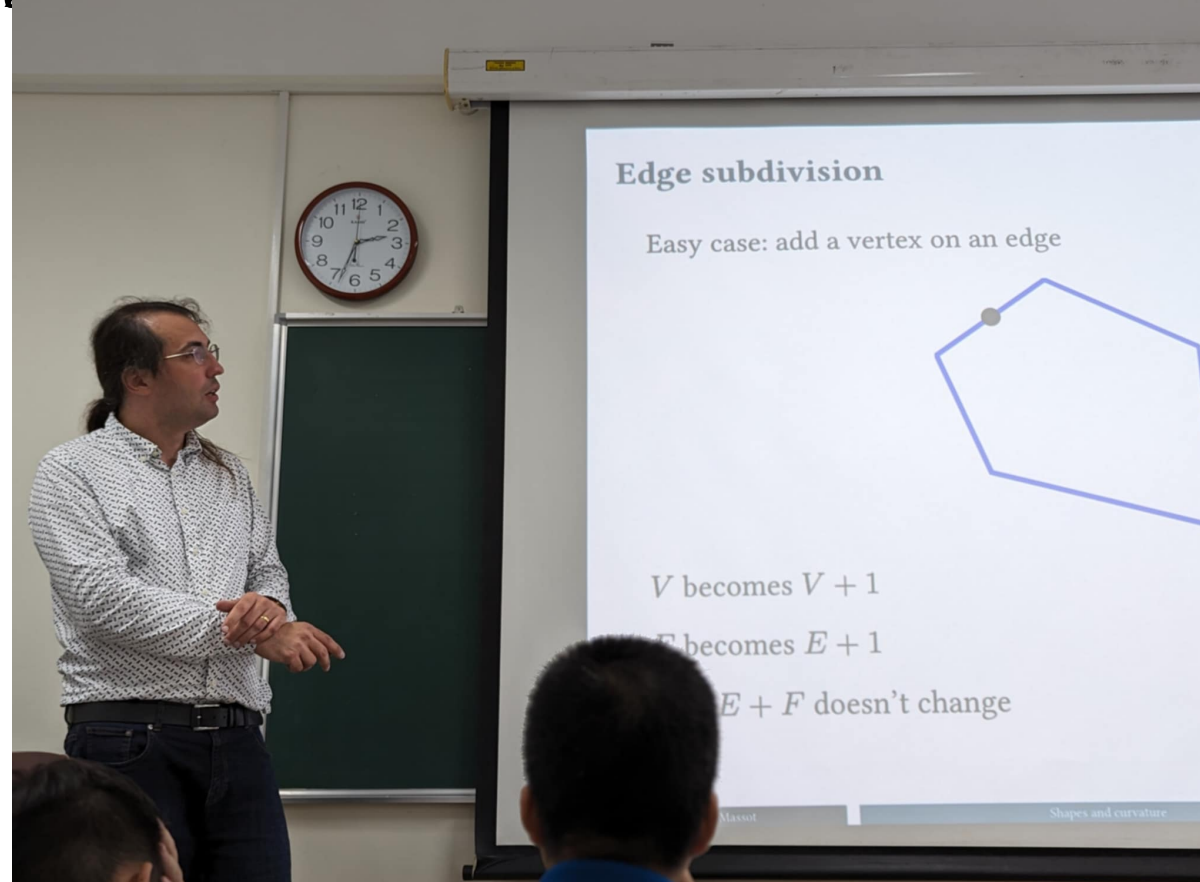
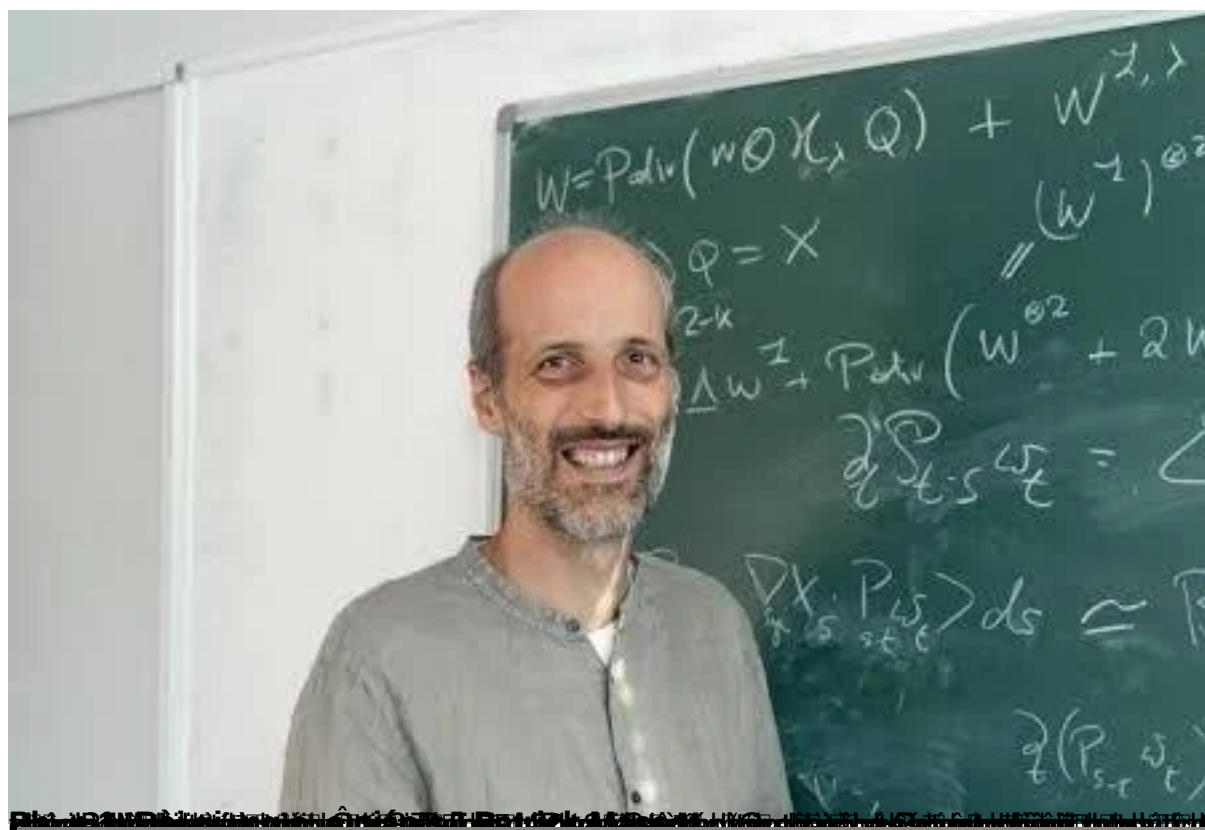


Chi u ngày 25/8/2025, t i Tr ng THPT Chuyên KHTN (182 L ng Th Vinh, Hà N i) đã di n ra ch ng trình Public Lectures Series: Mathematics, Art and Creativity, do Vi n Toán Cao c p ph i h p v i Tr ng THPT Chuyên KHTN t ch c.





§2 Cauchy-Schwarz

sliding slats in frictional contact

before

m_1	$\rightarrow$	v_1
m_2	$\rightarrow$	v_2
m_3	$\rightarrow$	v_3
$\vdots$		

after

	$\rightarrow$	$\langle v \rangle$
	$\rightarrow$	$\langle v \rangle$
	$\rightarrow$	$\langle v \rangle$
$\vdots$		

$\therefore \text{momentum conserved}$

$$\frac{\sum mv}{\sum m}$$

But *kinetic energy dissipates* :

before after

$$\sum \frac{1}{2} m v^2 \geq \frac{1}{2} (\sum m) \langle v \rangle^2$$

$$\sum m \sum m v^2 \geq (\sum m v)^2$$

Change variables $\begin{matrix} m \rightarrow m^2 \\ v \rightarrow v/m \end{matrix}$ to get

$$\sum m^2 \sum v^2 \geq (\sum m v)^2$$