



For small  $a$ ,  $I_{yy} = \int x^2 dm$

$$t = (1 - \frac{x}{h})a$$

$$c = (1 - \frac{x}{h})b$$

$$dm = \rho dV = \rho t c dx = \rho (1 - \frac{x}{h})a (1 - \frac{x}{h})b dx$$

$$= \rho ab (1 - \frac{x}{h})^2 dx, \quad \rho = \text{density}$$

$$m = \rho ab \int_0^h (1 - \frac{x}{h})^2 dx = \rho ab (x - \frac{x^2}{h} + \frac{x^3}{3h^2})_0^h = \frac{1}{3} \rho ab h$$

$$I_{yy} = \rho ab \int_0^h (1 - \frac{x}{h})^2 x^2 dx = \rho ab (\frac{x^3}{3} - \frac{2x^4}{4h} + \frac{x^5}{5h^2})_0^h = \frac{1}{30} \rho ab h^3,$$

$$\underline{I_{yy} = \frac{1}{10} m h^2}$$