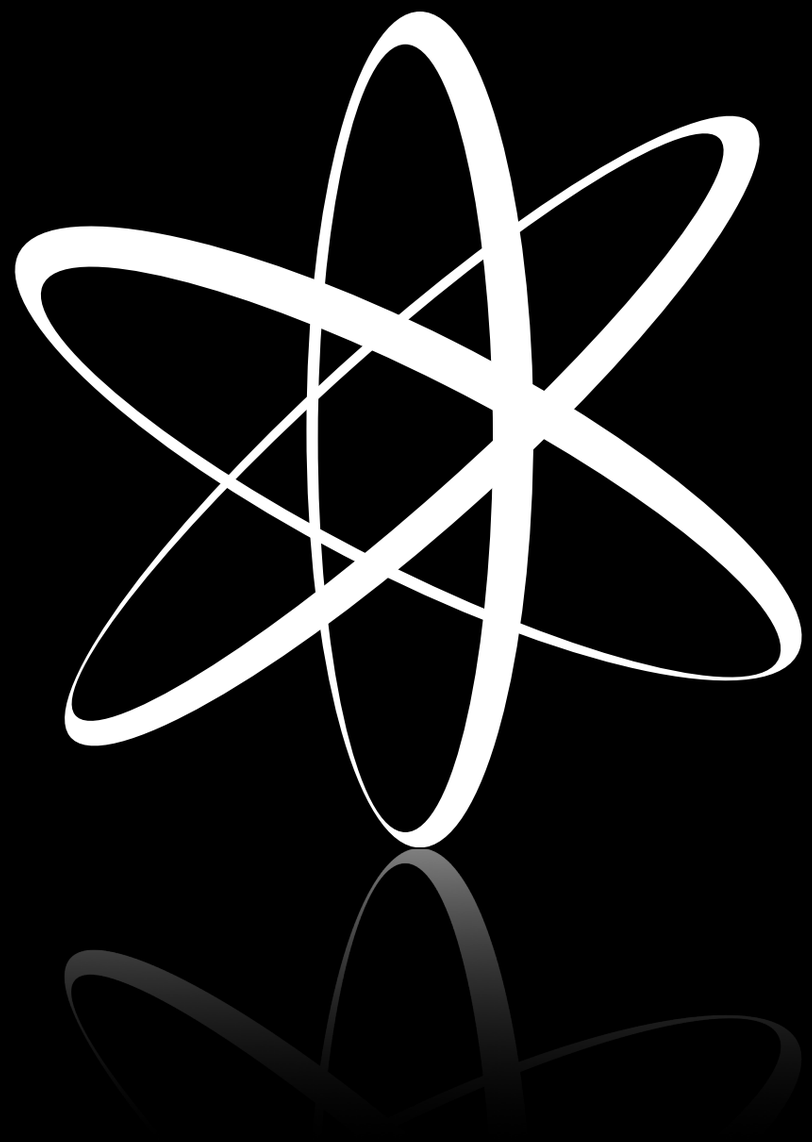
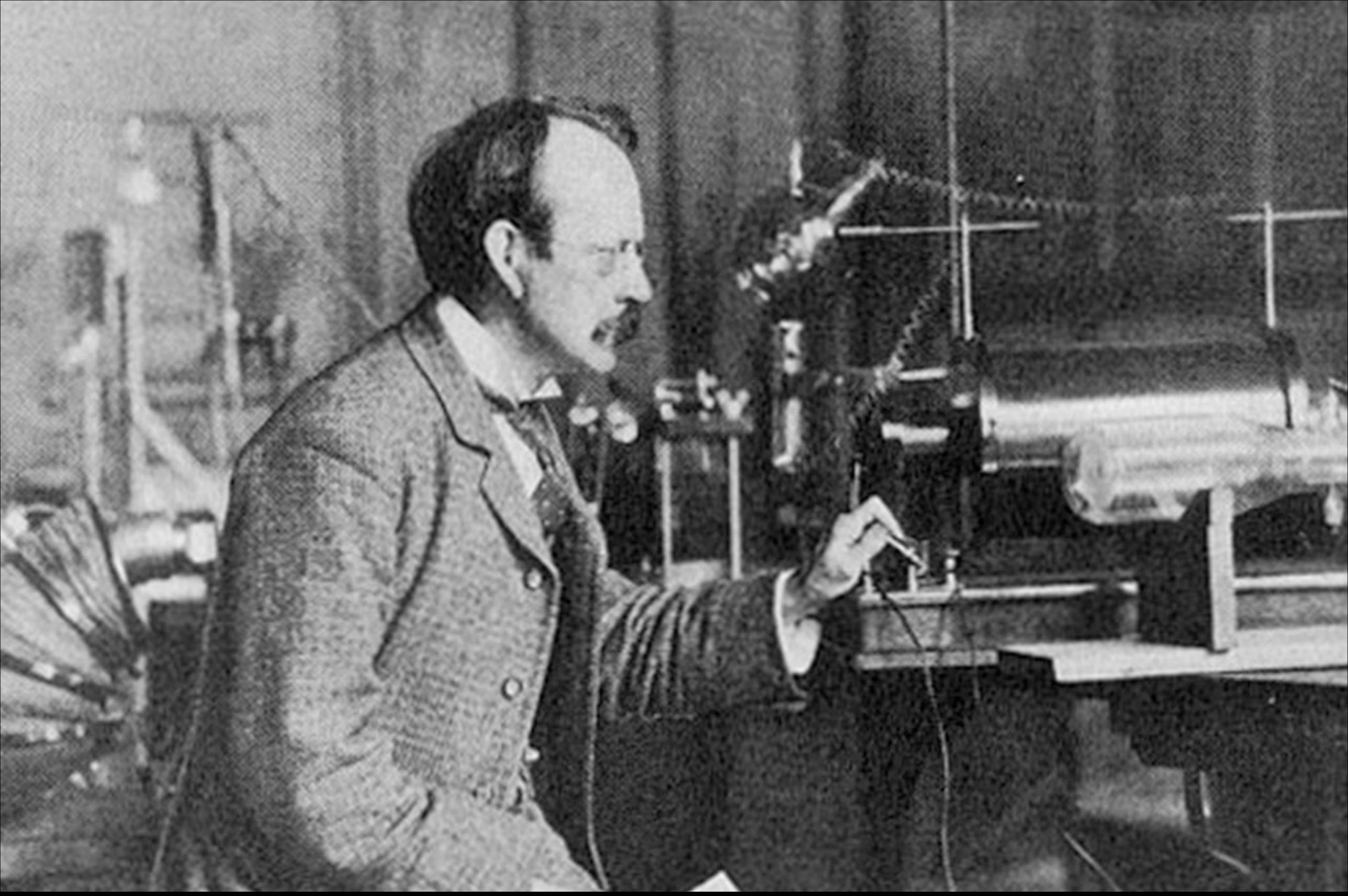
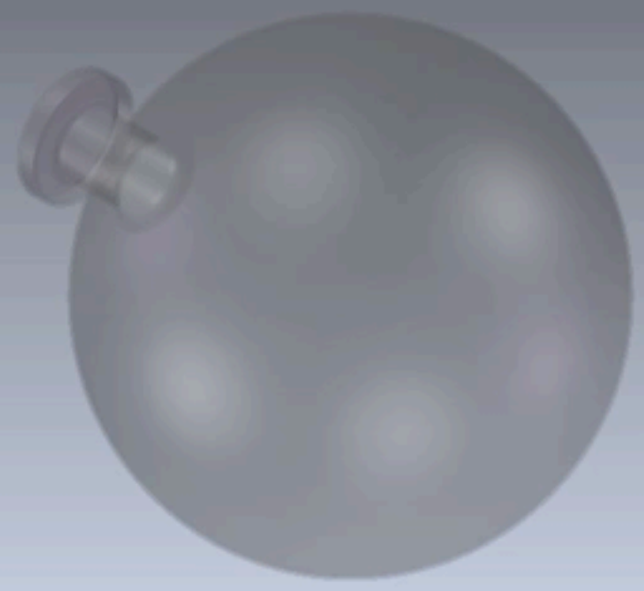
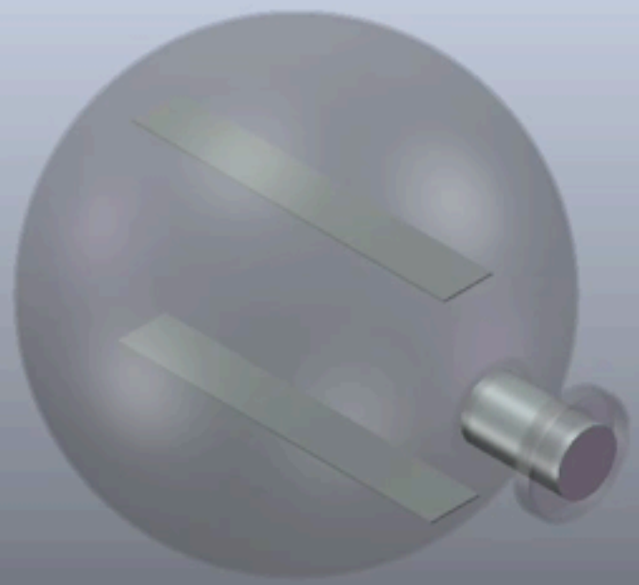


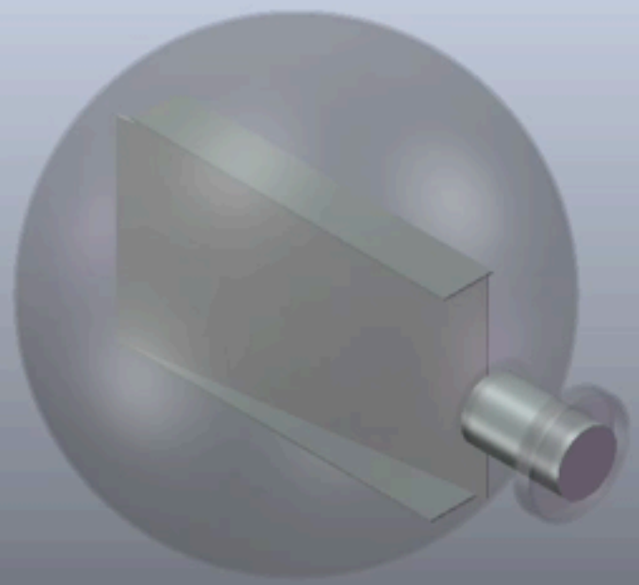


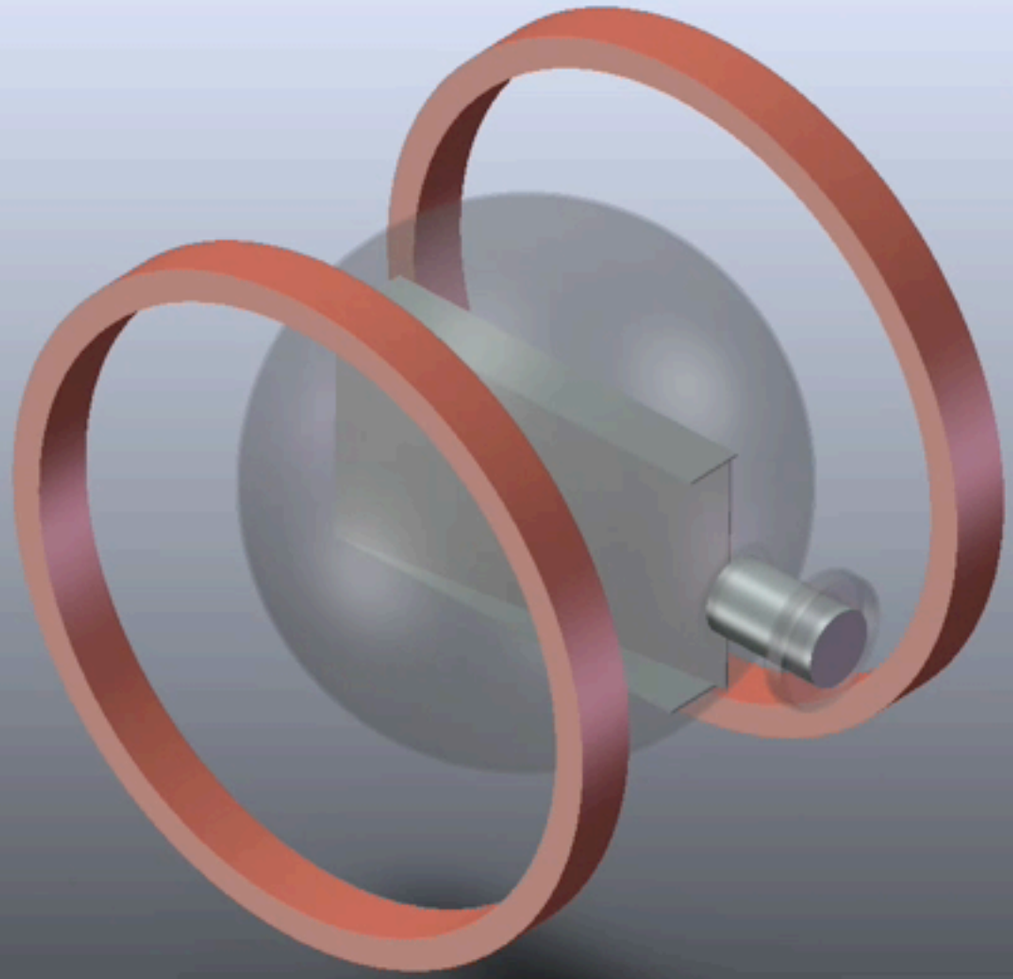
Charge to Mass Ratio

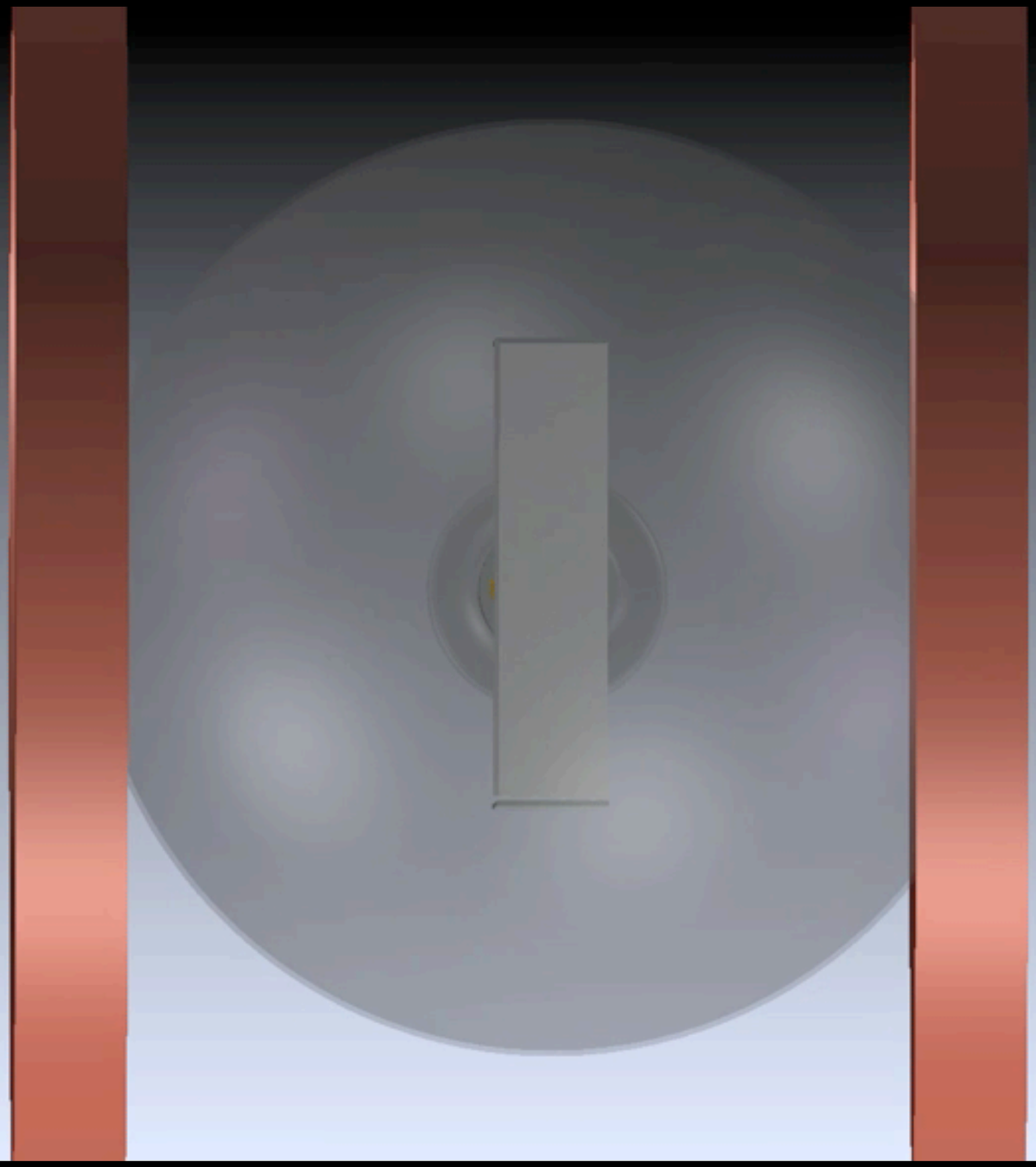
CHRISTOPHER CULBREATH
NIK GLAZAR

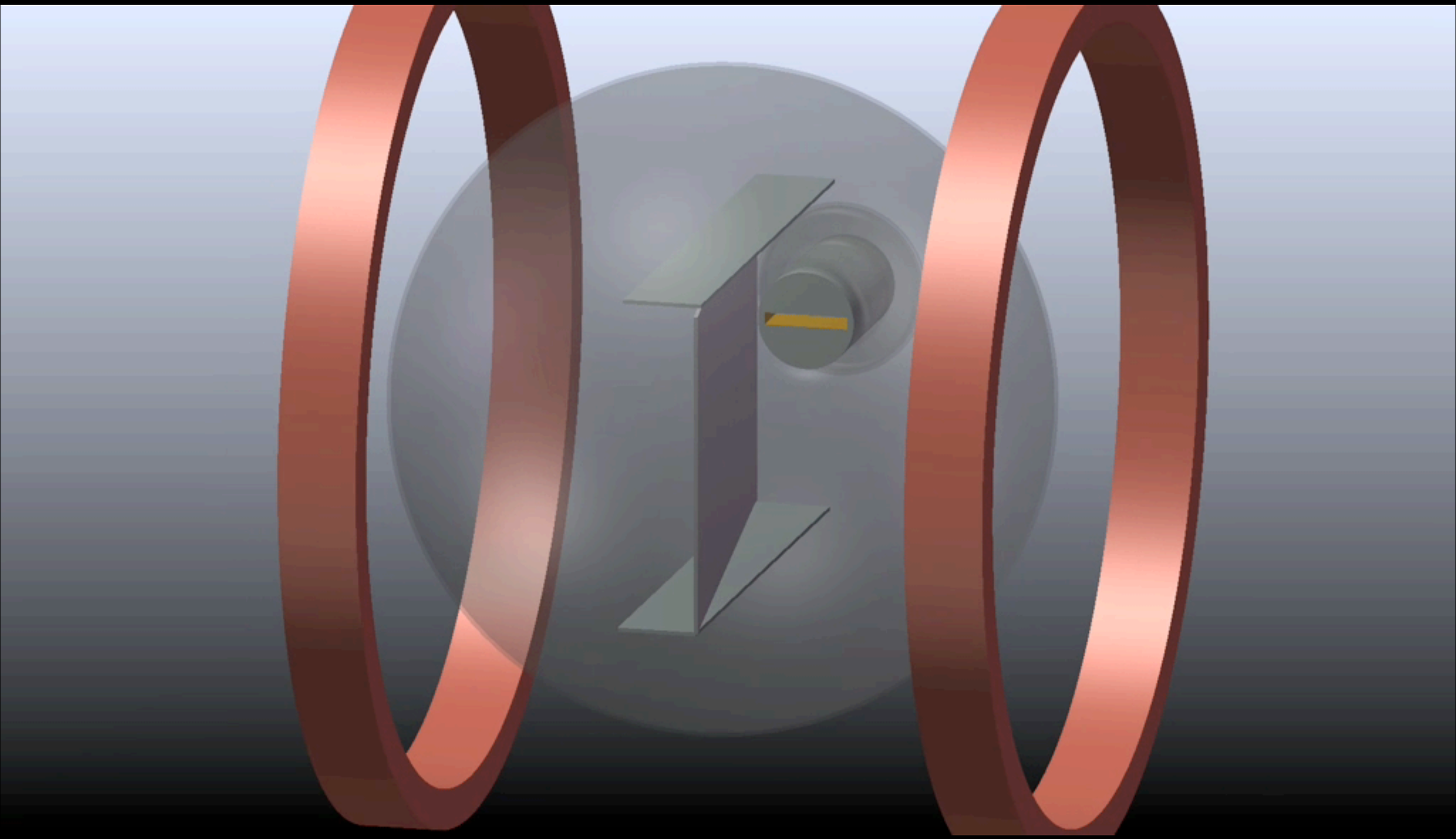


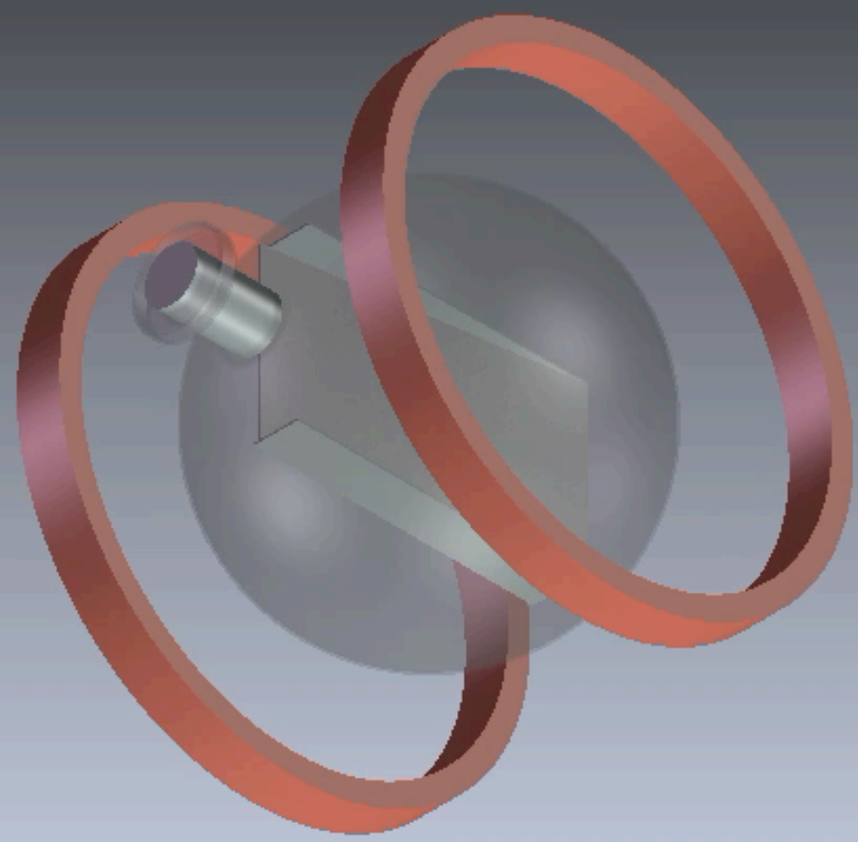


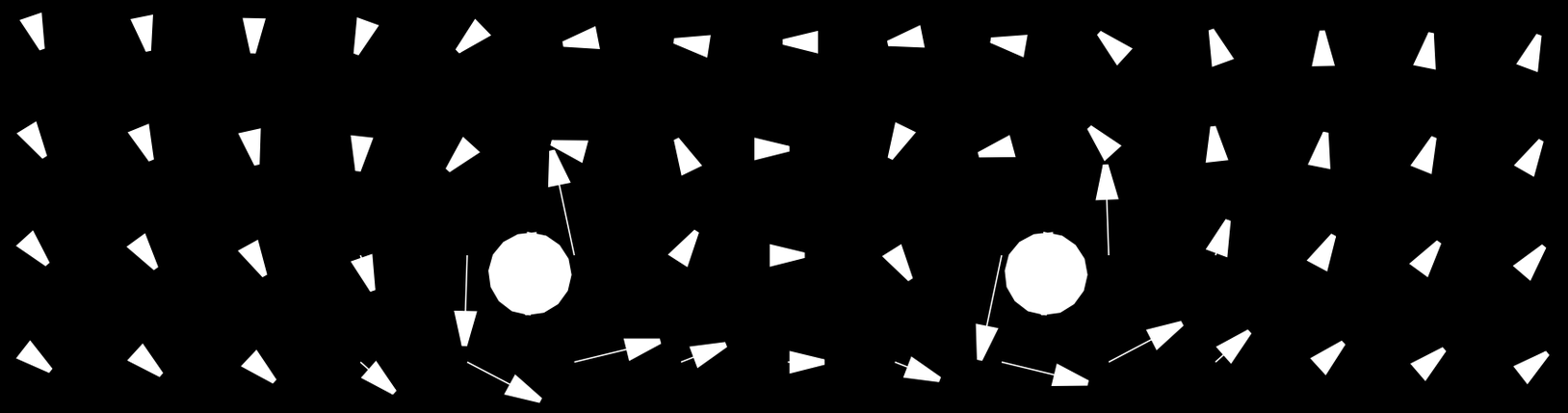




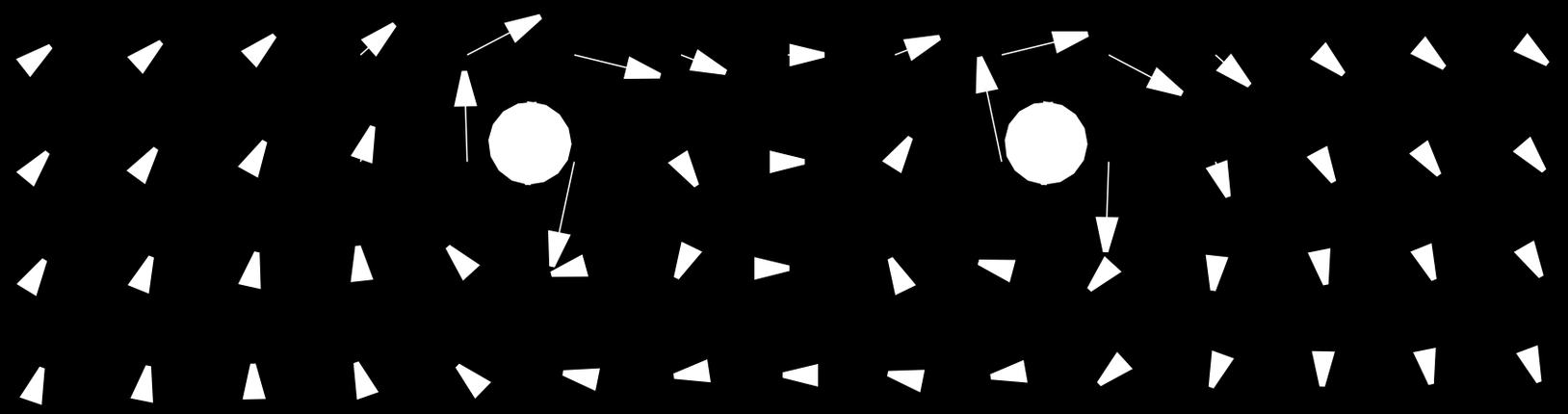


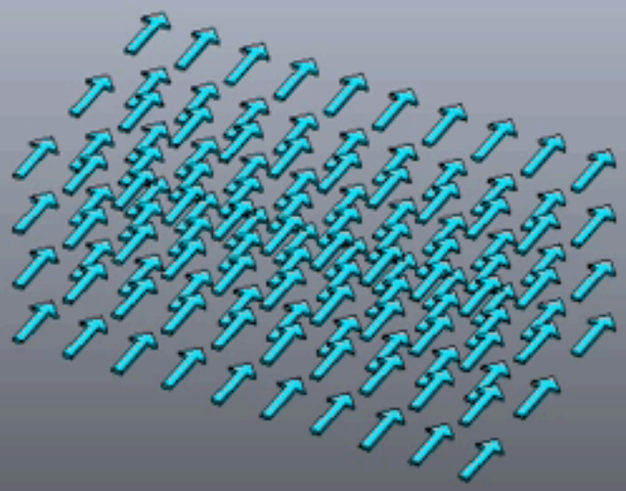


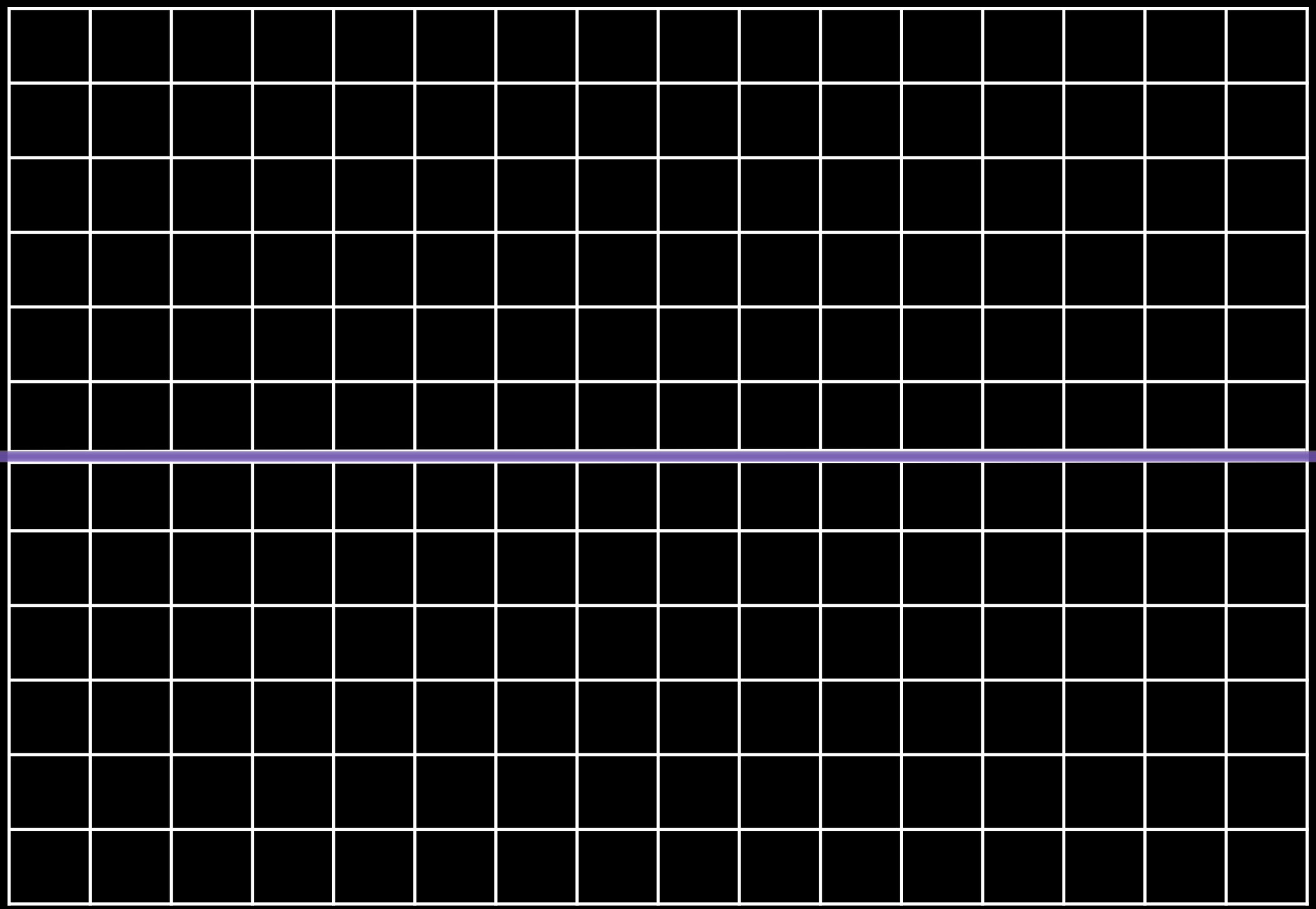


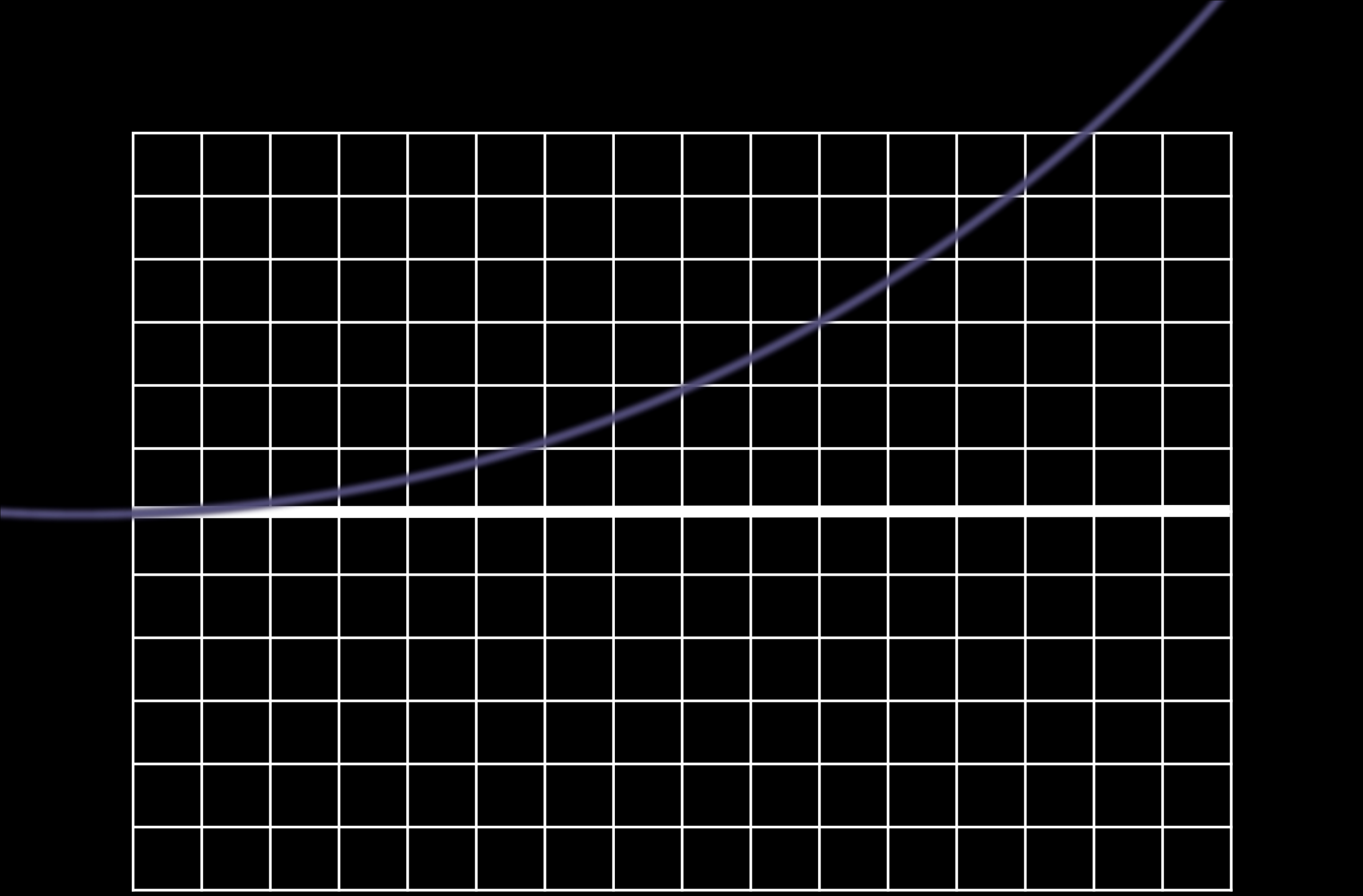


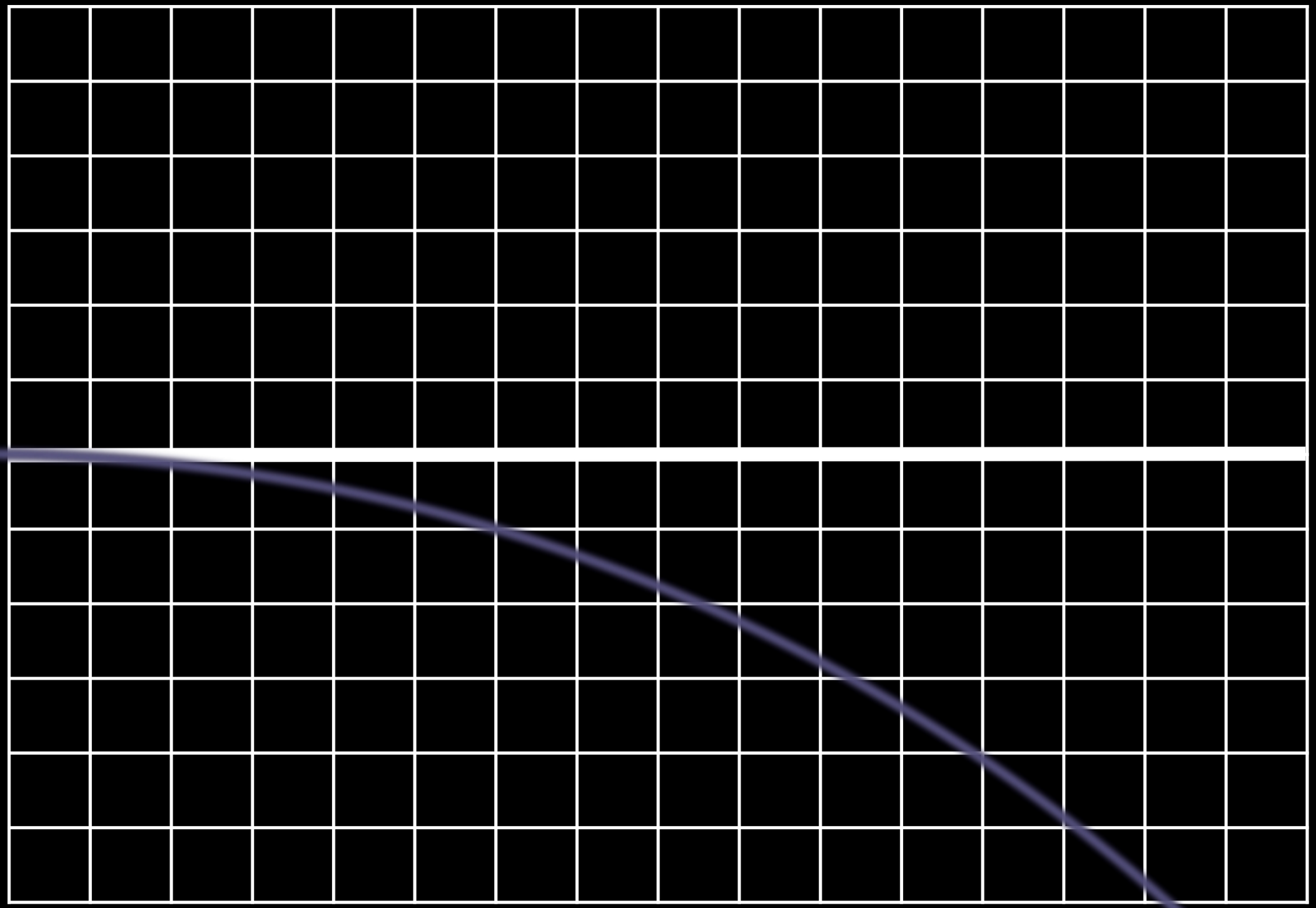
$$B = \frac{16\mu_0 NI}{\sqrt{125}D}$$

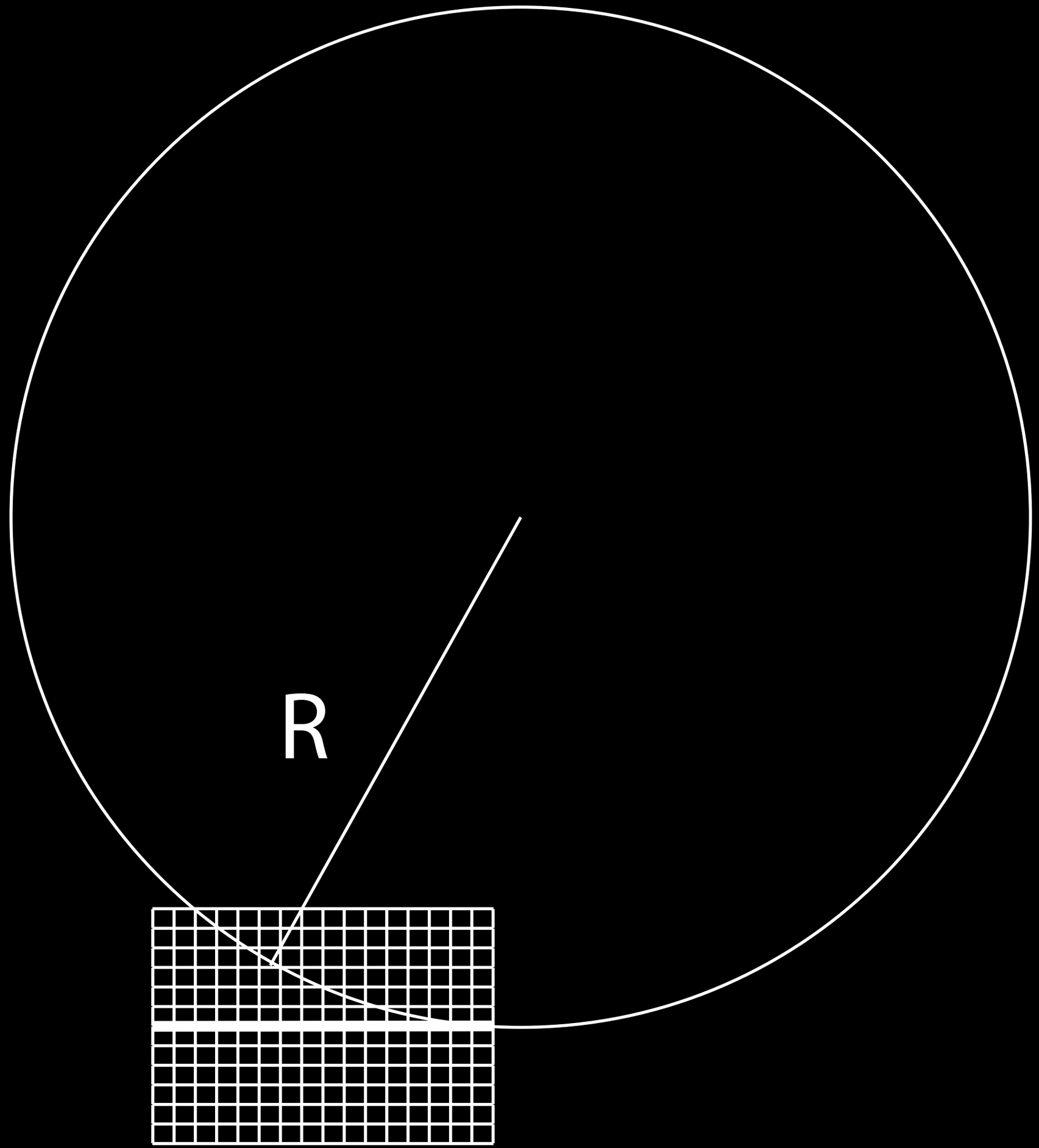












$$v\hat{t}$$

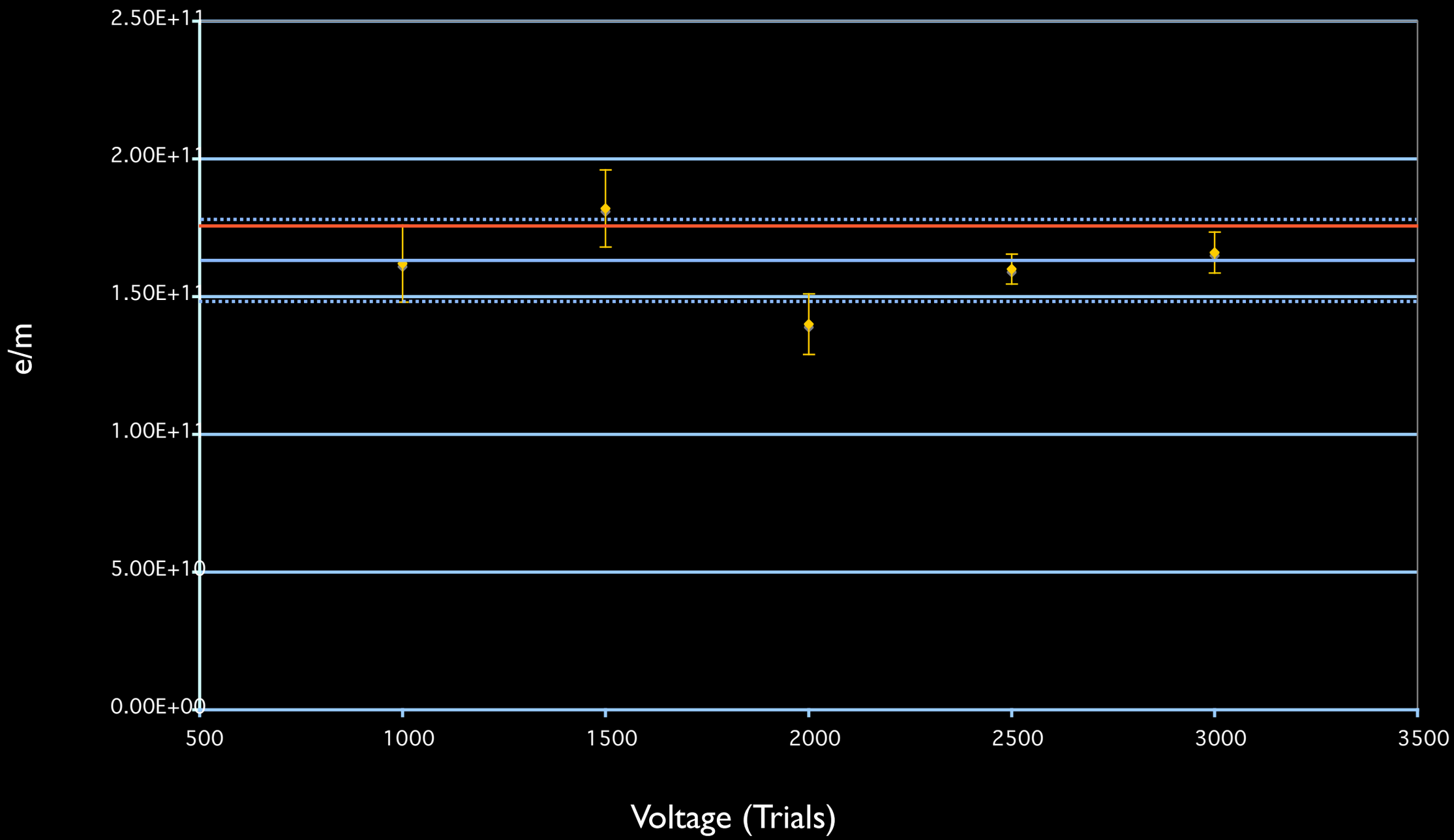
$$q(v\hat{t}) \times \vec{B}$$

$$\vec{F}_b = F_b\hat{r}$$

$$m\frac{v^2}{r} = Bqv$$

$$\frac{e}{m} = \frac{2V_a}{B^2r^2}$$

Our Results


2.50E+11
2.00E+11
1.50E+11
1.00E+11
5.00E+10
0.00E+00
e/m
500
1000
1500
2000
2500
3000
3500
Voltage (Trials)

$+\sigma_x$

$x_{known} = 1.76 \times 10^{11}$

$+\sigma_{\bar{x}}$

$\bar{x} = 1.62 \times 10^{11}$

$-\sigma_{\bar{x}}$

$-\sigma_x$

Sources of Systematic Error

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