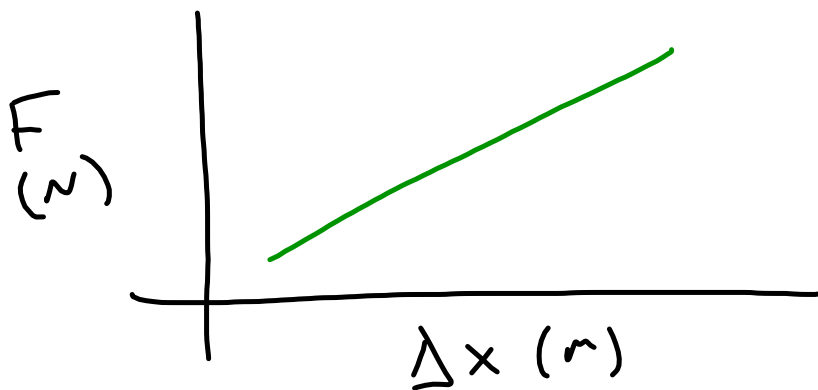


Hooke's Law Lab

- Data:
 - 5 springs
 - 5 displacement / Force measurements per spring
 - Input in Excel
- Graph
 - In Excel, on same graph
 - Function of best fit, equation
 - Whiteboard → Graph data, Functions of best fit, equations

Springs



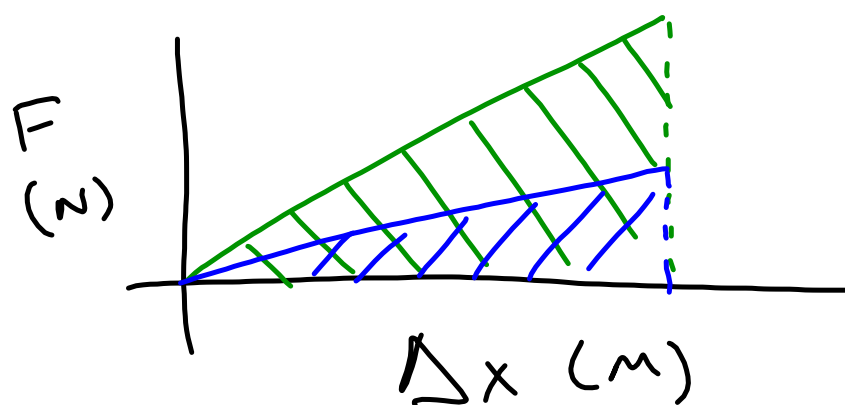
Hooke's Law

$$\text{slope} = \frac{F}{\Delta x} = k \quad \left[\frac{\text{N}}{\text{m}} \right]$$

spring constant

$$F = -kx$$

↑ restoring force



$$E_{el} = \frac{1}{2} F (\Delta x)$$

$$E_{el} = \frac{1}{2} (k) (\Delta x) (\Delta x)$$

$$E_{el} = \frac{1}{2} k (\Delta x)^2$$