

Random time, angle



any data that could be a bit too big or too small depending on how you read it that time.

Systematic

Affects all data the same way - not in the error bars
length of string (L), width of dowel, mass of bob



$$V = \frac{d}{t} \begin{matrix} \sim \text{systematic} \\ \sim \text{random} \end{matrix}$$

$$U_k = k \left(\frac{U_{\theta}}{\theta} \right)$$

$$\% U_t = \frac{U_t}{t}$$

$$U_v = V (\% U_t)$$

$$\frac{\text{Range}}{2}$$

$$U_v = V \left(\frac{\frac{\text{Range}}{2}}{\text{Ave Time}} \right)$$

$$K = \frac{1}{2} m v^2$$

0.02, 0.016, 0.0066
0.02, 0.03097

Plug into Lagrangian

