

Link for reference video by Kureshi sir :

<https://drive.google.com/file/d/1Wh8zTwHMGNggfKXo-42yrb9gHA6dk9oN/view?usp=drivesdk>

Relations between variables:

$$K(\text{expt}) = T(\text{exp}) / 2\pi \sqrt{\frac{ga^2}{L}}$$

Where,  $2a$  = distance between 2 wires

$K$  = radius of gyration of Bifilar suspension.

$K_{th} = l/2\sqrt{3}$ , where,  $l$ =length of rectangular bar

$M.I. \text{ expt} = m(K_{\text{expt}})^2$  and  $M.I._{th} = m(K_{th})^2$

IMPORTANT NOTE:

Length ( $l$ ) of rectangular bar= 0.53 meters.

Use that and calculate  $K_{th} = l/2\sqrt{3} = 0.53/2\sqrt{3}$

Use following equation to calculate time period( $t$ ) that you will be giving to user after simulation is run.

$$K_{th} = T(\text{exp}) / 2\pi \sqrt{\frac{ga^2}{L}}$$

$g=9.81$  m per seconds sq. (gravitational constant)

$a=0.23$  meters

$L$ =length of suspension will be given by user.

After getting  $T(\text{exp})$  multiply it by 10

So,  $t = T(\text{exp}) * 10$

Time period ( $t$ ) will be given to user after simulation is run. Unit is seconds.

You can vary value of ' $t$ ' by  $\pm 1\%$  to compensate for natural factors so that user will get different values for theoretical and practical values; but difference between them should be very minimal.

