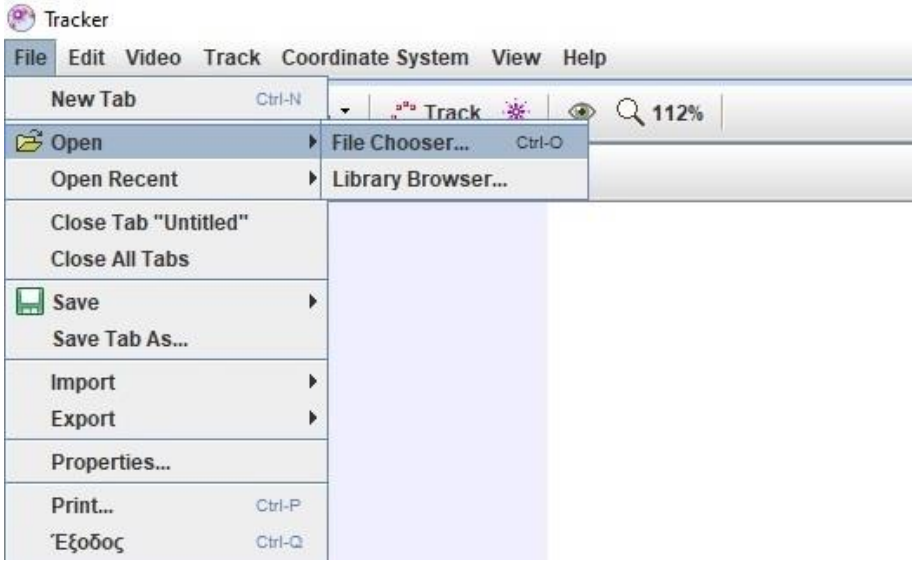
Simple pendulum

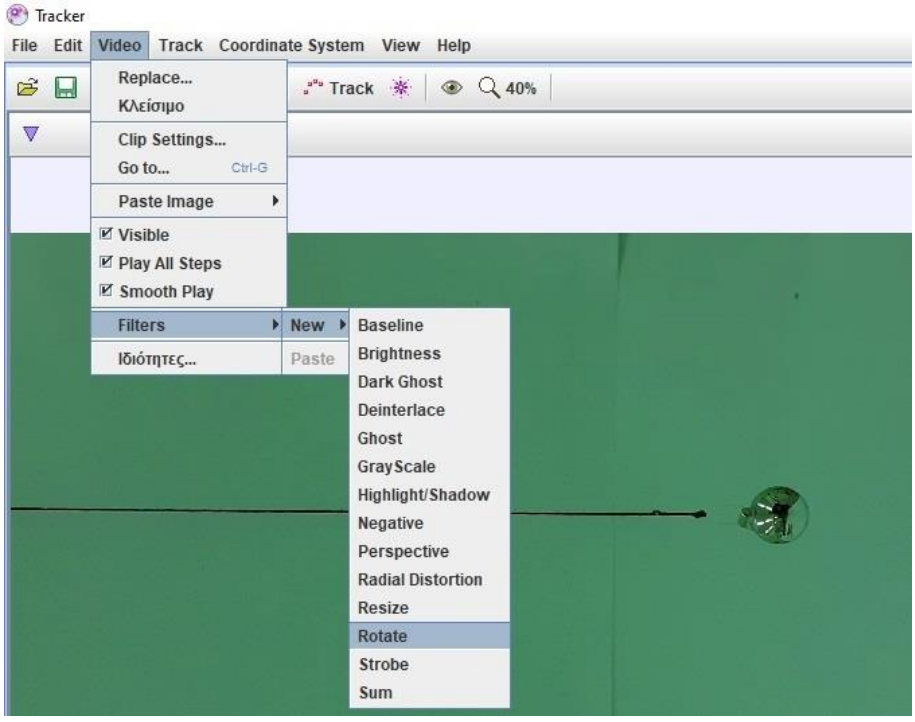
Use the following video:

https://drive.google.com/file/d/1Kyu3rJ0CpVYqJjqjd7TKPJ88DWITdHPB/view?usp=sharing

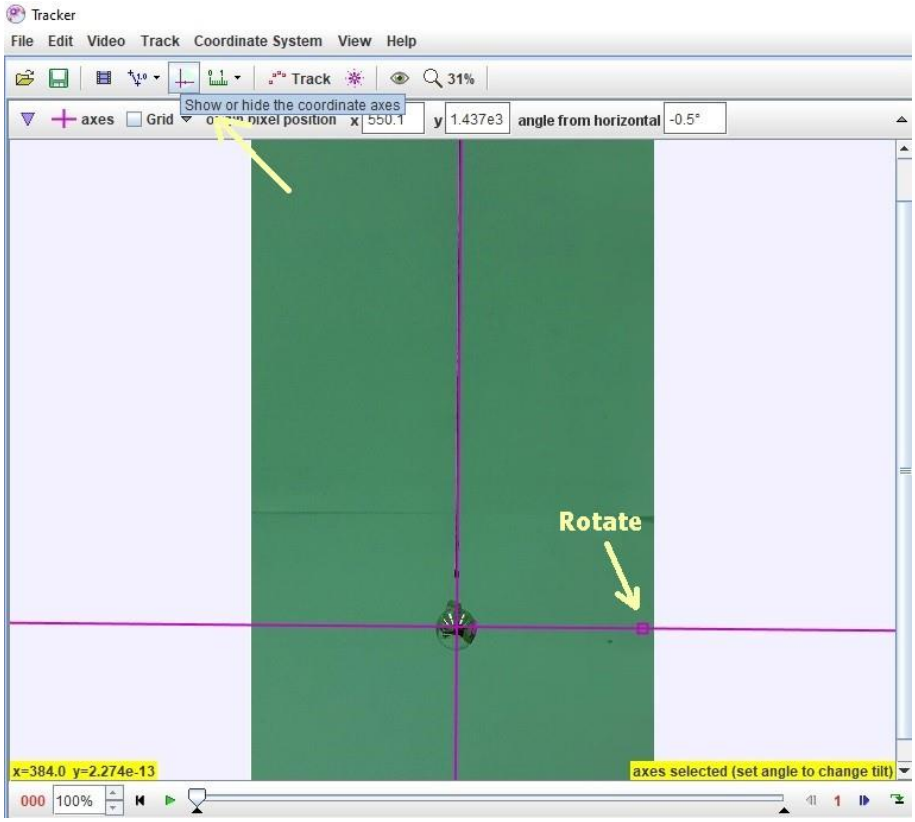
Open the video in the tracker with the open button.
[File -> Open -> File Chooser]



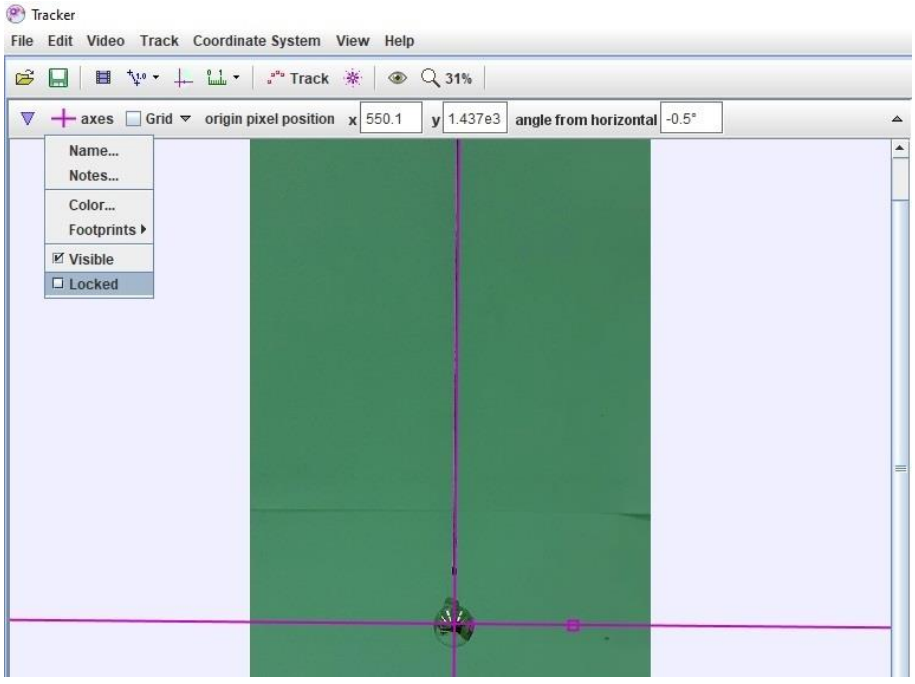
Rotate the video if necessary.
[Video -> Filters -> New -> Rotate]



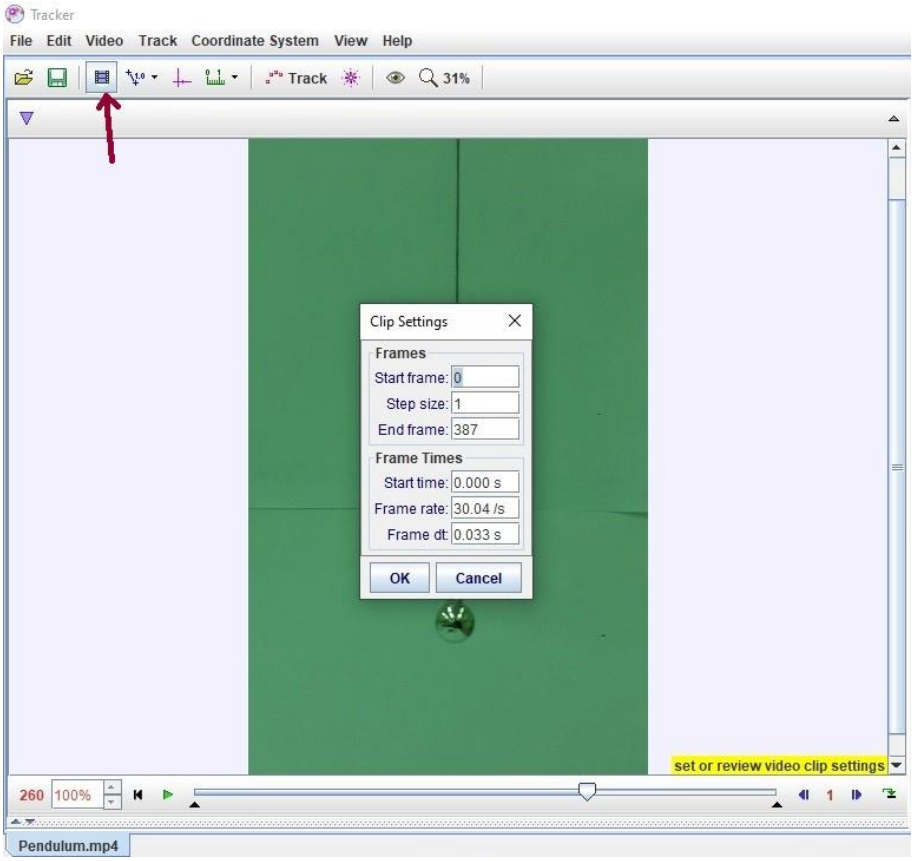
In some frame where the pendulum is motionless, place the coordinate axes with origin at the center of the bob and align the y axis with the thread
[use “Show or hide the coordinate axes” icon]



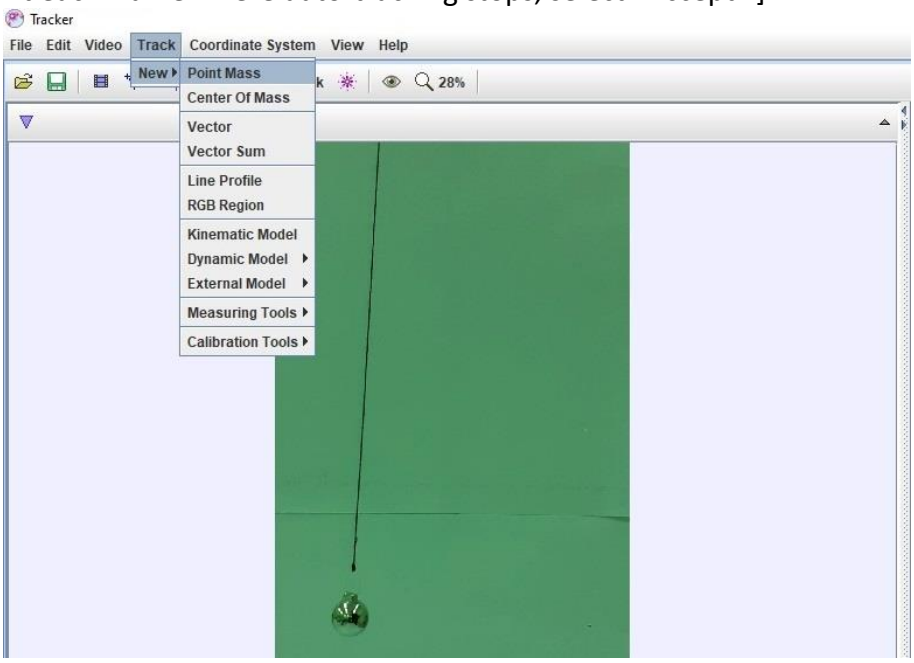
Lock and hide the axes
[axes -> locked - Click “Show or hide the coordinate axes” icon]

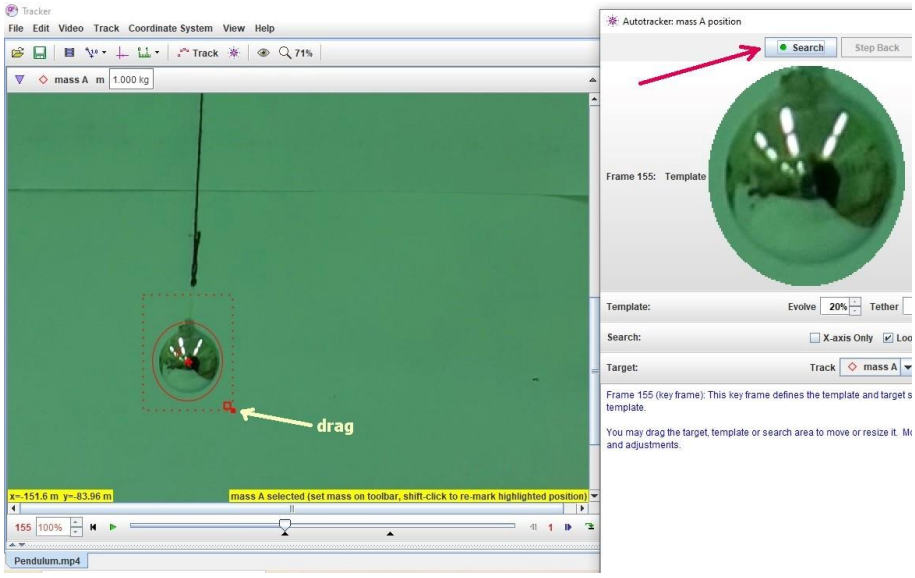


Select Start frame 155 - End frame 260 with step 1
[use “Show or hide clip settings” icon]

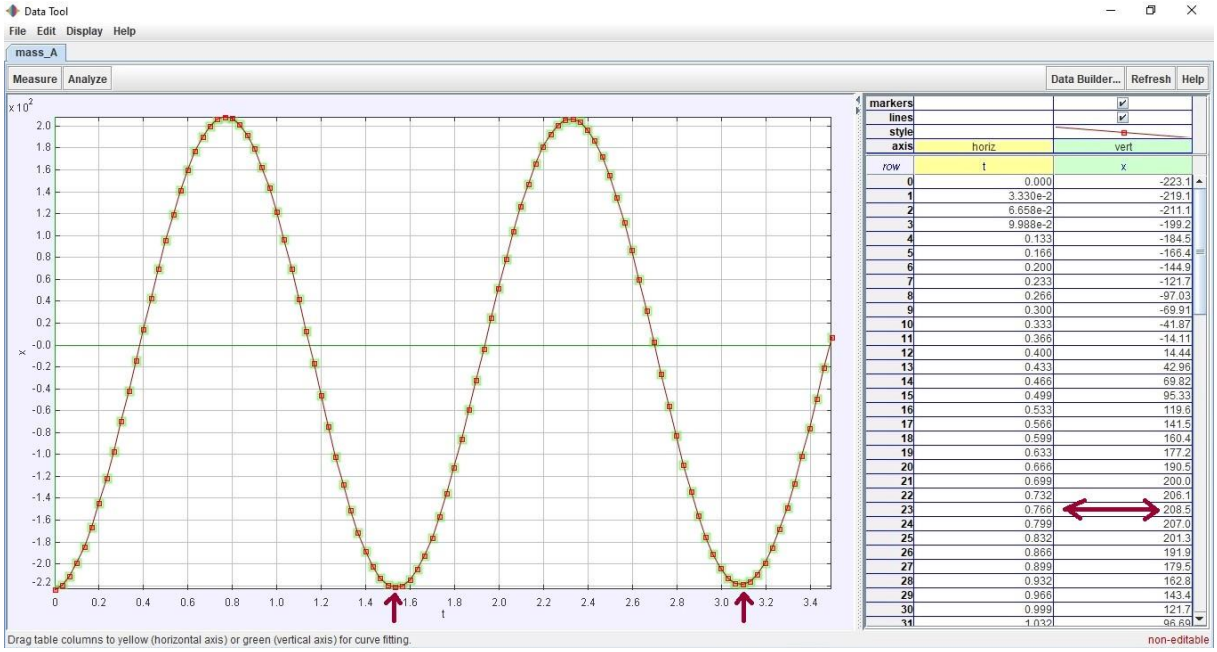


In frame 155 create a point mass on the bob and start automatic tracking
[Track - > New - > Point mass, then Ctrl+Shift+click on the bob, then Search
At each frame where auto-tracking stops, select “Accept”]



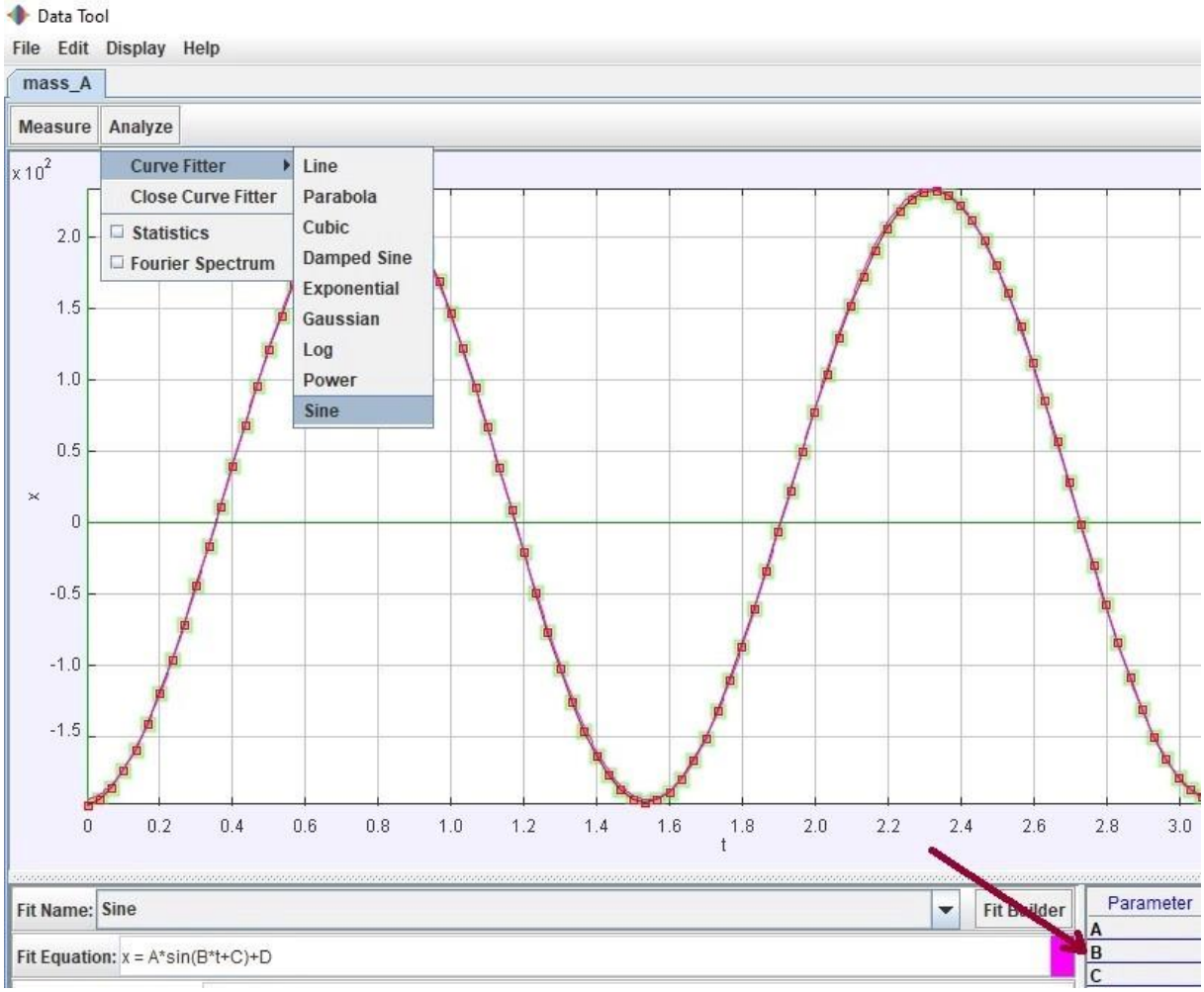


Double-click the x-t graph.
Find the period from two suitable points on the graph or by using the values of x and t.



<u>Alternatively do the following:</u>

Analyze -> Curve Filter -> Sine
Take the value of parameter B which is the angular frequency ω.



Calculate the period from the equation $T = 2\pi / \omega = 6.28318 / \omega$.