Edmond Nicolau Technical College
**FOCŞANI**

WORKSHOP 3
IMPORTANCE OF VIDEOS FOR SCIENCE LEARNING.
TRACKER SOFTWARE

SCICON CONFERENCE - NEW APPROACH TO THE STUDY OF SCIENTIFIC DISCIPLINES IN SCHOOLS

MULTIPLICATION EVENT E2

WHAT IS TRACKER?

- Tracker is a free video analysis and modeling tool built on the Java Open Source Physics (OSP) framework. It is designed for use in physical education.

- Video Modeling Tracker is a powerful way to combine video with computer modeling. For more information, see Particle Model Help or the AAPT Summer Meeting posters Video Modeling (2008) and Video Modeling with Tracker (2009).
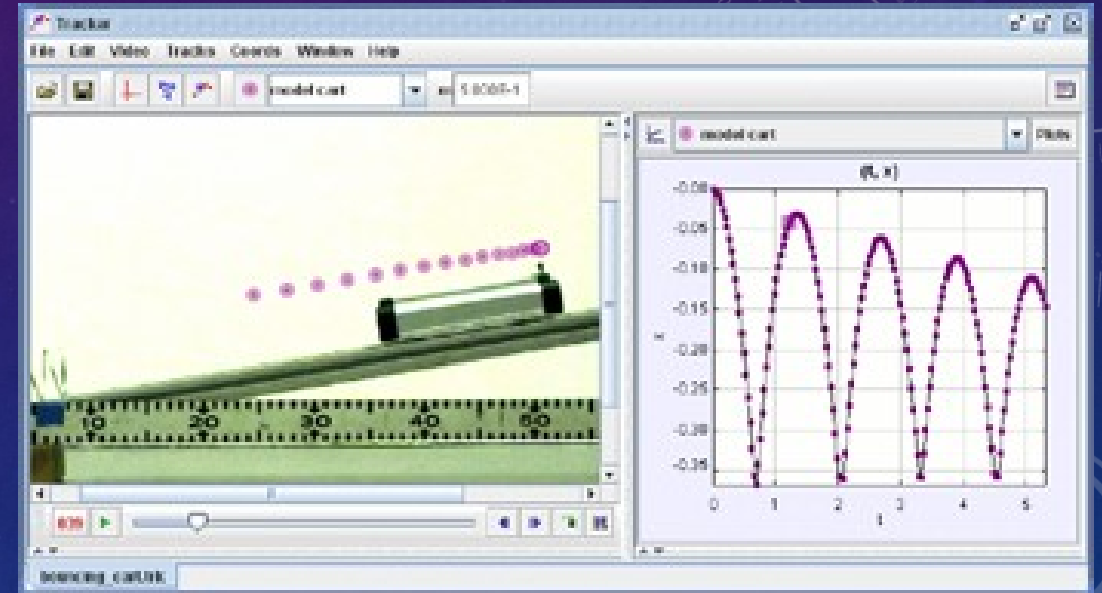
TRACKER

VIDEO EDITING, ANALYSIS AND MODELING SOFTWARE
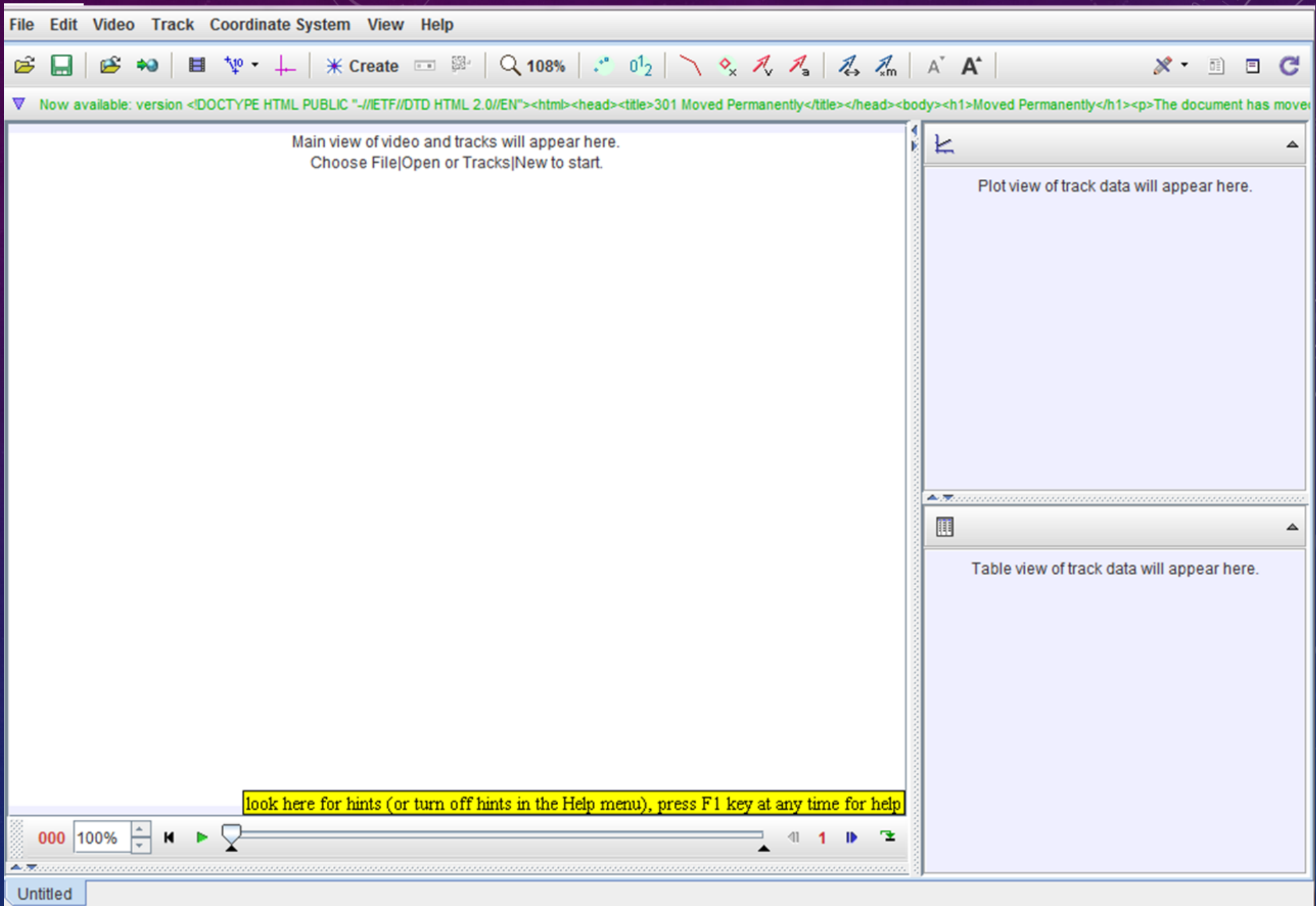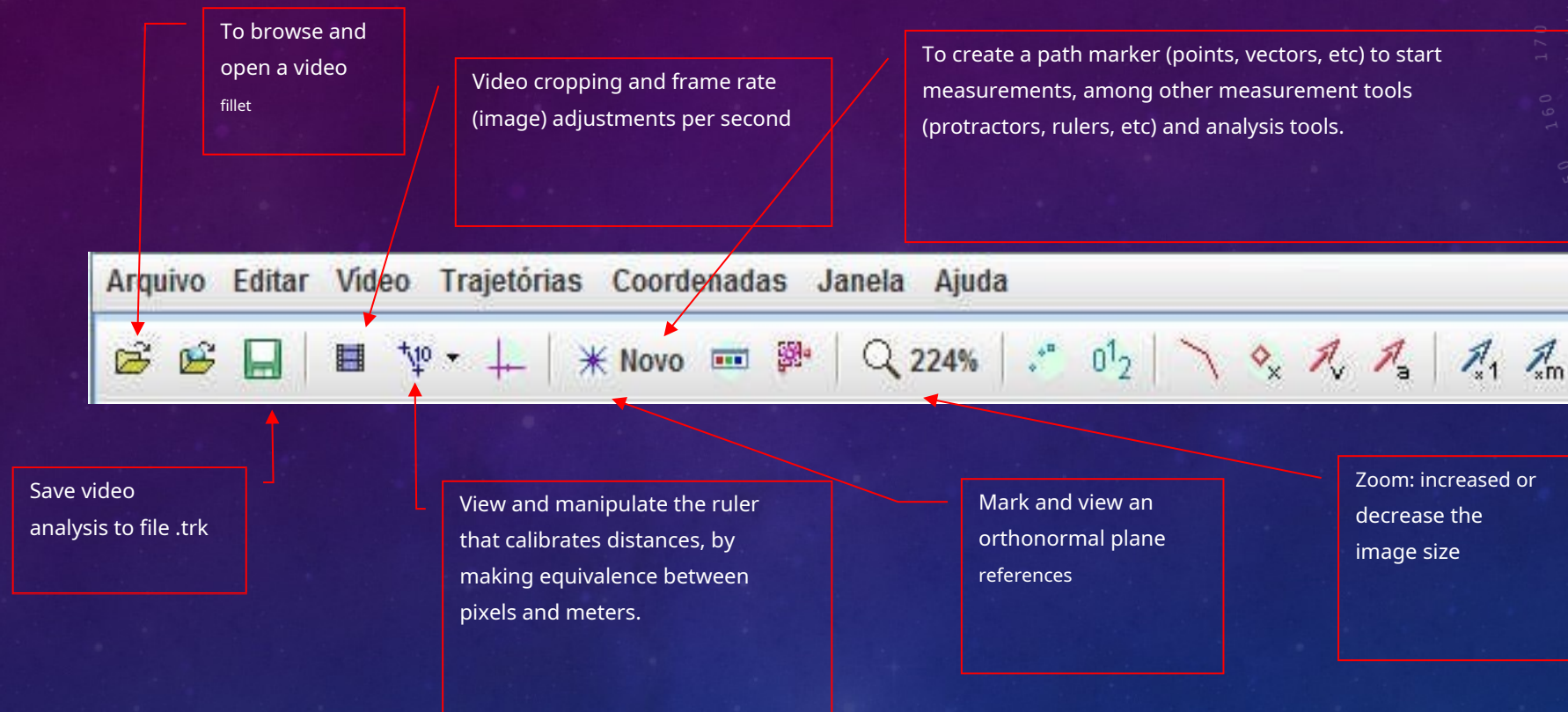
EXPERIMENT REAL

⬇

ÎNREGISTRAT VIDEO

⬇

Activitate experimentală bazată pe video

3

INSTALARE

https://physlets.org/tracker/

To browse and open a video

fillet

Video cropping and frame rate (image) adjustments per second

To create a path marker (points, vectors, etc) to start measurements, among other measurement tools (protractors, rulers, etc) and analysis tools.

Save video analysis to file .trk

View and manipulate the ruler that calibrates distances, by making equivalence between pixels and meters.

Mark and view an orthonormal plane

references

Zoom: increased or decrease the image size

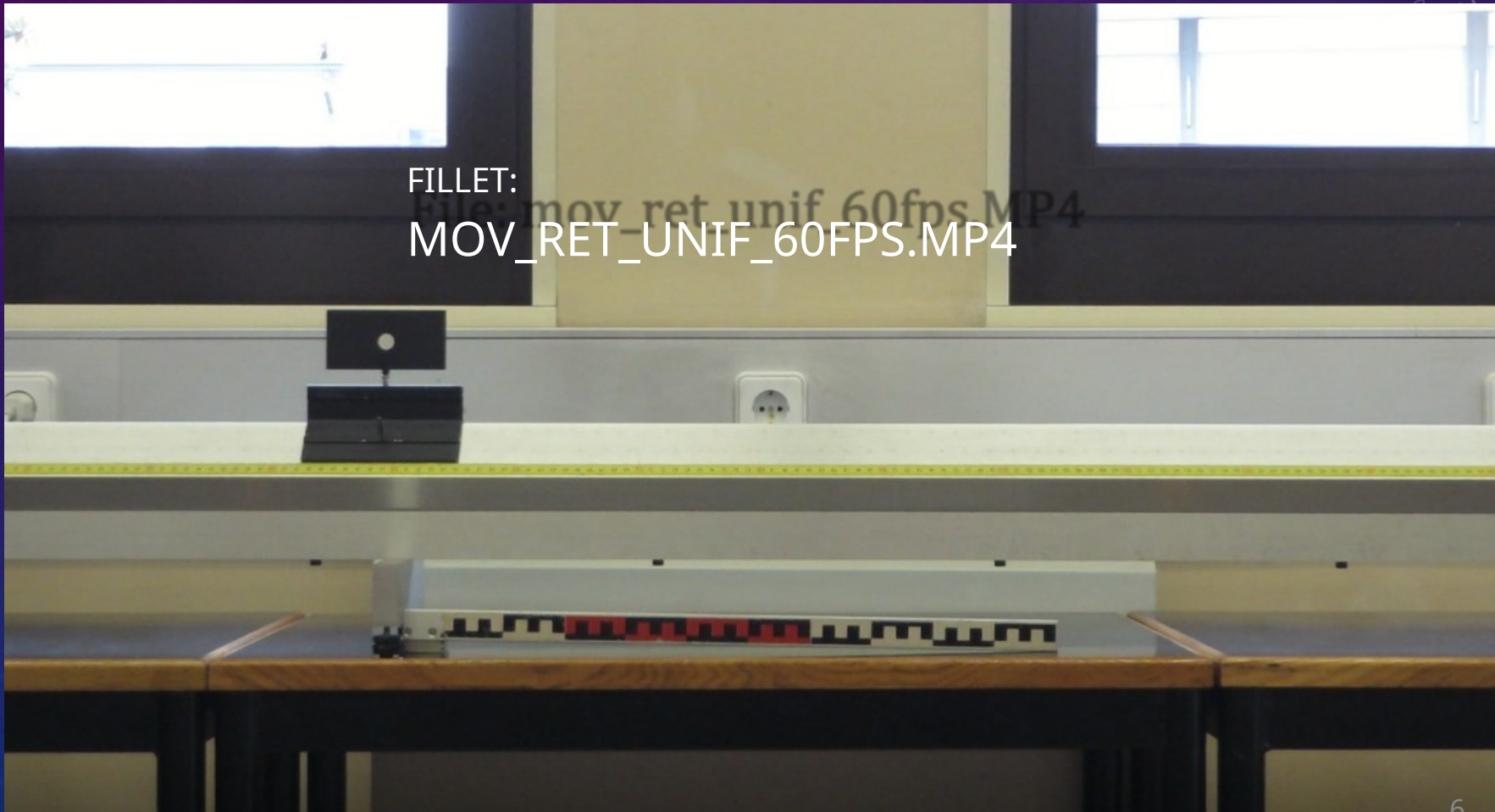Arquivo   Editar   Vídeo   Trajetórias   Coordenadas   Janela   Ajuda

Novo   224%

Choosing the Video

FILLET:
MOV_RET_UNIF_60FPS.MP4

Select Video Segment

Number of *frames* per forward or backward

Reposition video at beginning of selected 1st frames

p*layl breaks* button to play video

By right-clicking with the mouse cursor over the "tape indicator" of the video, we can select which frame starts and ends the video segment to be analyzed (black triangles below)

Frame or time counter

Start and *end* indicators of selected video segment

752 | 100%

Video Frames Per Second (fps)

Arquivo   Editar   Vídeo   Trajetórias   Coordenadas   Janela   Ajuda

Q 200%   Novo

Ajustes de Corte de Vídeo

Frames

Quadro incial:	691
Tamanho do intervalo:	1
Quadro Final:	752

Frame Times

Tempo de Início:	0,000 s
Taxa de quadros:	25,00 /s
Quadro dt:	0,040 s

Aceitar   Cancelar
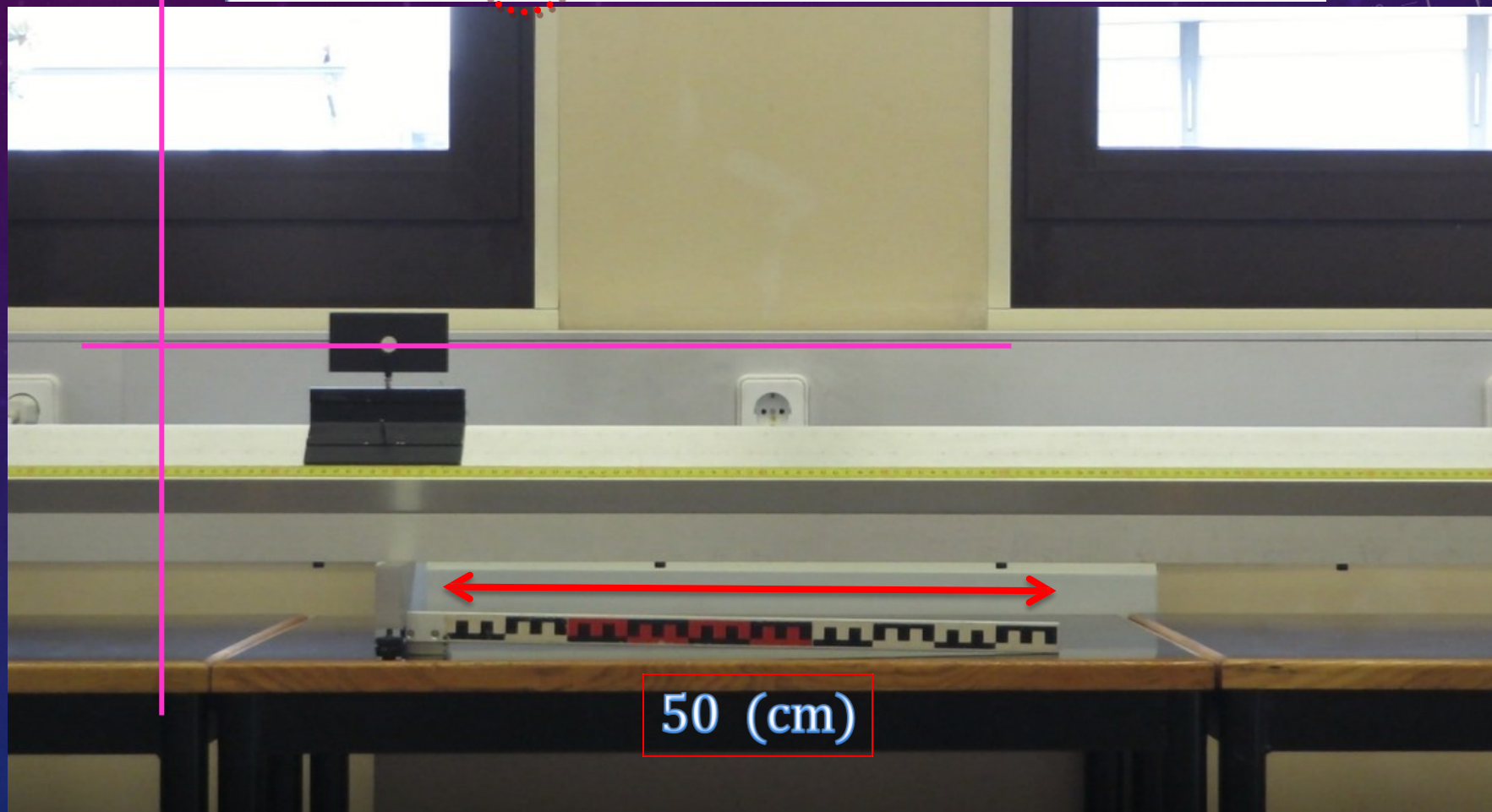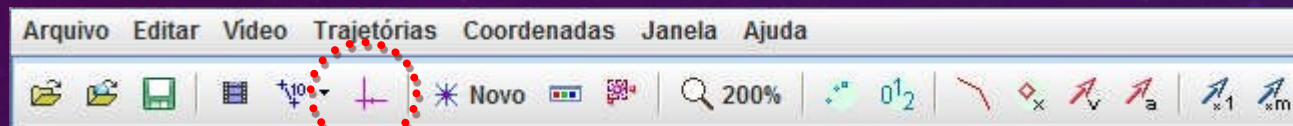
752   100%
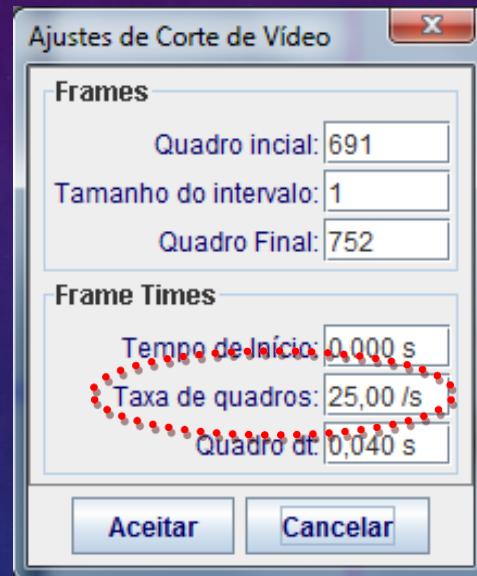
Frame counter hour

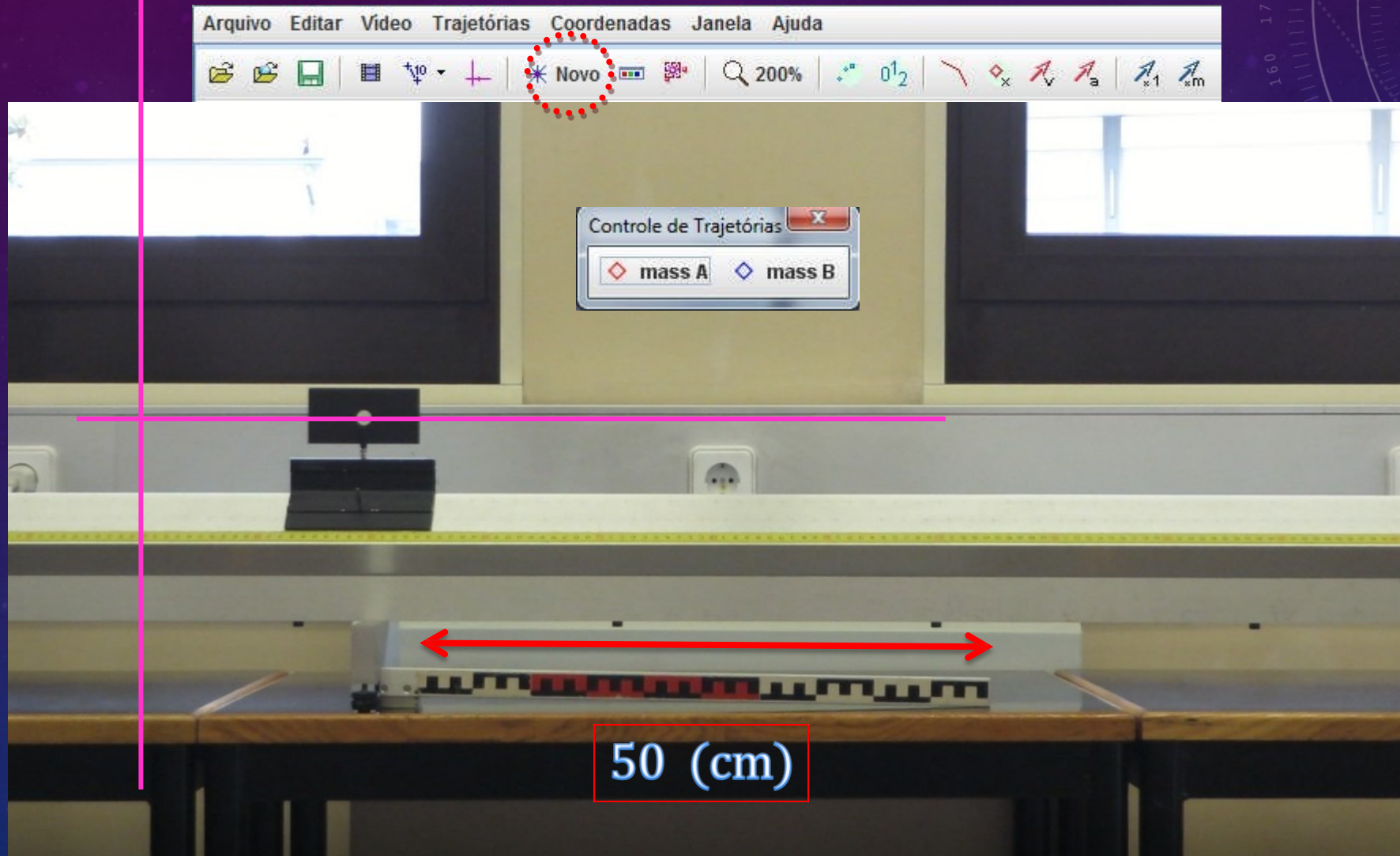time counter

Calibration
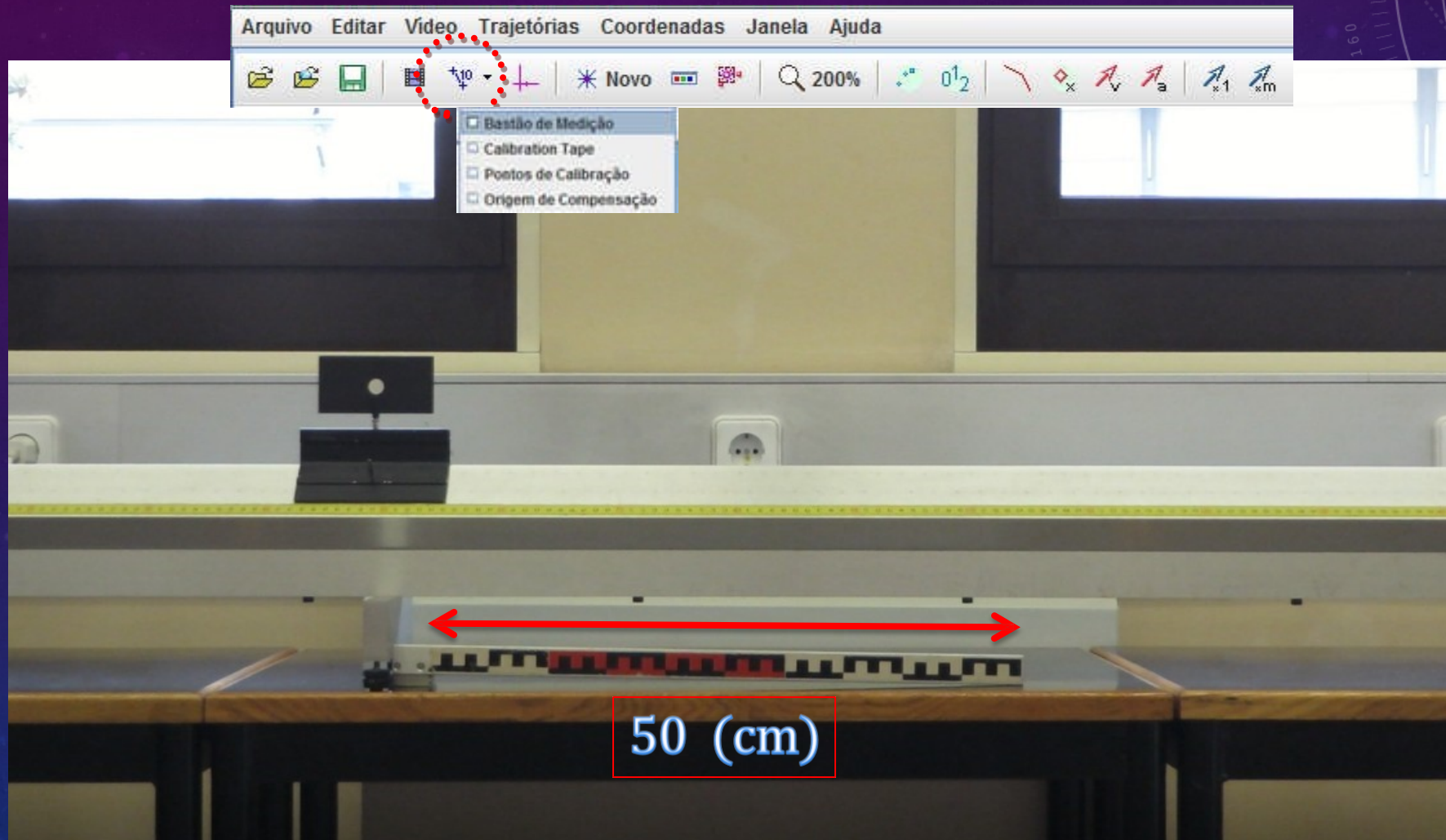
Frame of Reference

Position Marker

Position Marking

Manual Marking of Positions

⬇

Shift key + **Mouse left button**

(the cursor automatically changes to the next frame)

(repeat the process until the end of the shoot)

Select the type of date visualization (graphs or tables)

Select the number of graphs viewed (maximum 3 graphs)

Selects the marked trajectory (set of points)

Synchronizes the xx axis of the various graphs viewed

Select the physical quantity represented on the ordinate axis of the graph

Selects the physical quantity represented on the axis of the chart's abscissa

Selects the type of data visualization (graphs or tables among others).

Selects the marked trajectory (set of points)

Selects the type of data to display in the table (position, velocity, acceleration, etc.)

14