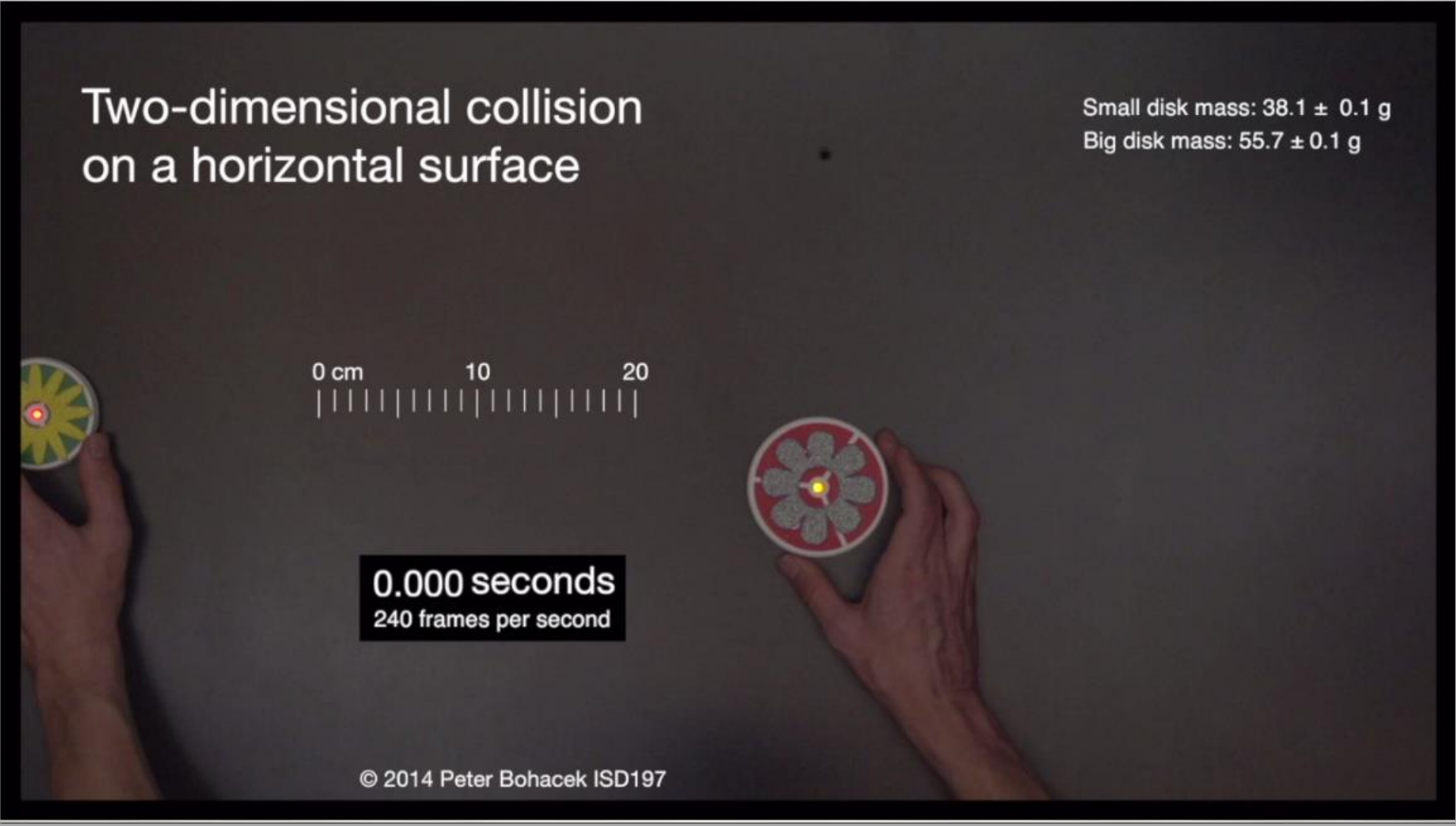
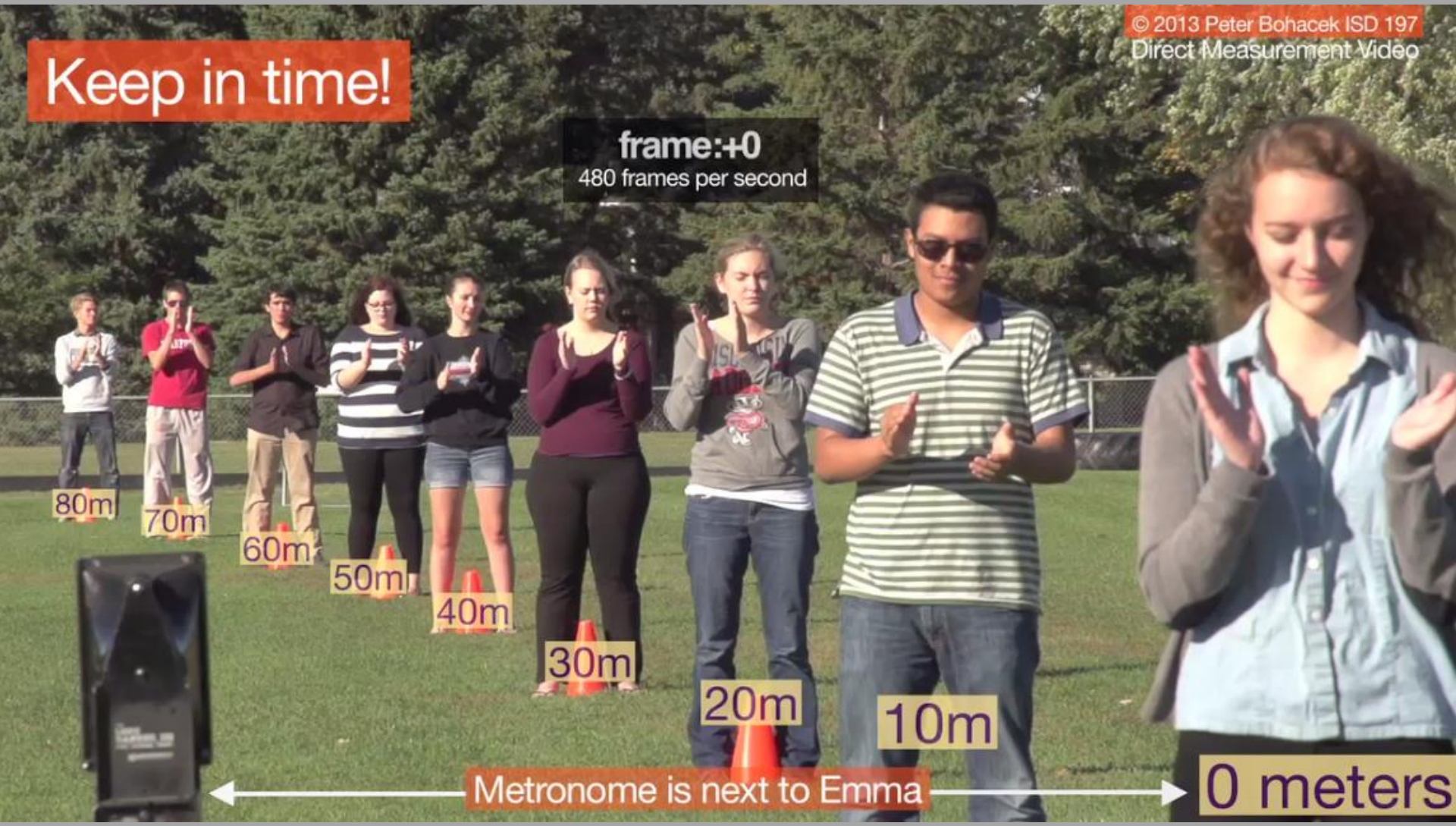


This video is ten seconds long.

It would take much longer to set up in lab, and it would be difficult to make accurate measurements

This video could simply not be done in lab

This looks like something that could be done in lab, but most students end up leaning in such a way that it doesn't show momentum conservation.



This 19 second video allows students to accurately and intuitively measure the speed of sound in air.

This is soooo much cooler than the typical mass on a spring problem.

DMV's even work for really simple concepts

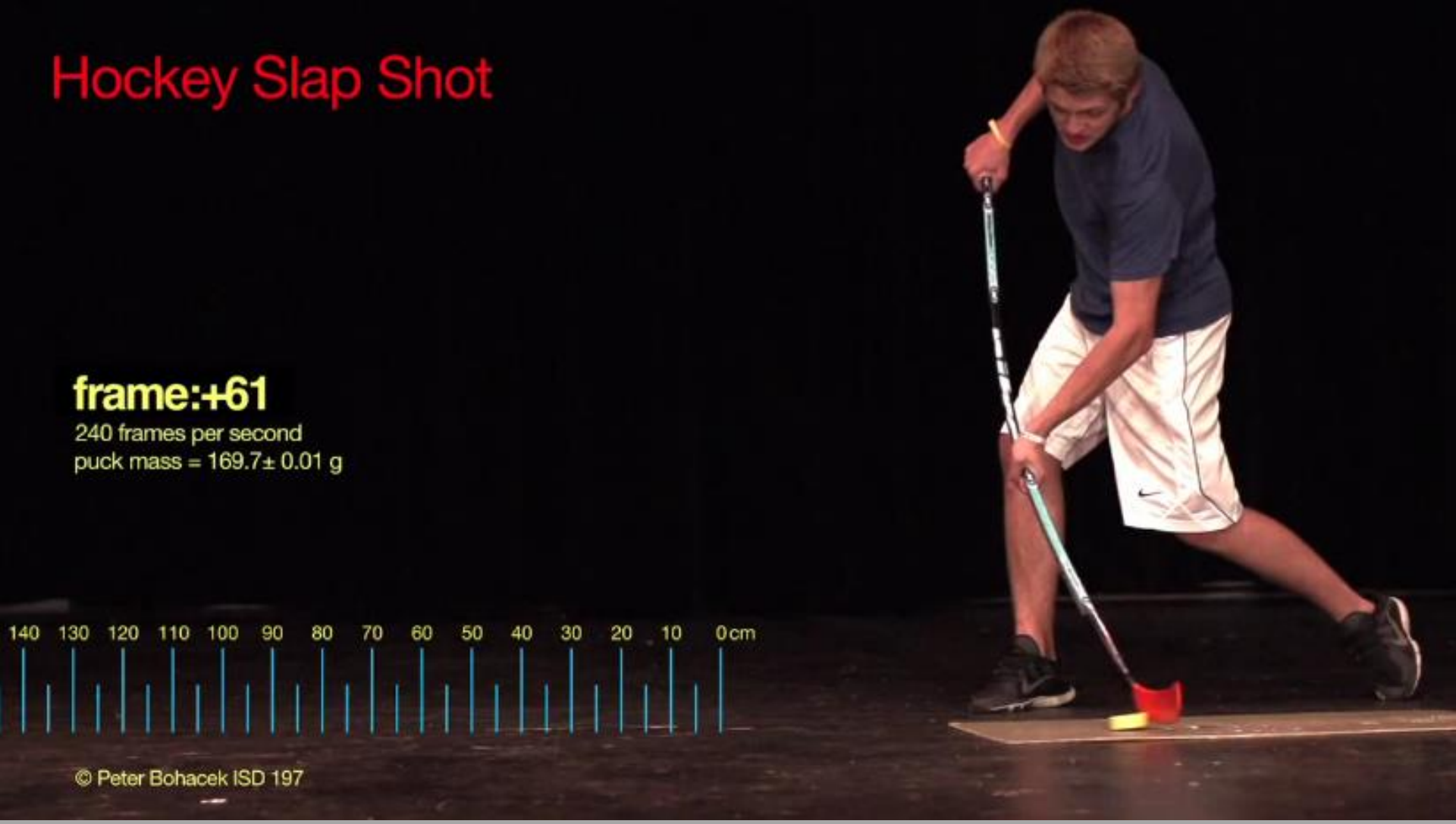
Imagine this as a word problem.

Direct Measurement Videos
discovering physics ...one frame at a time

Using Direct Measurement Videos to Teach Introductory Mechanics

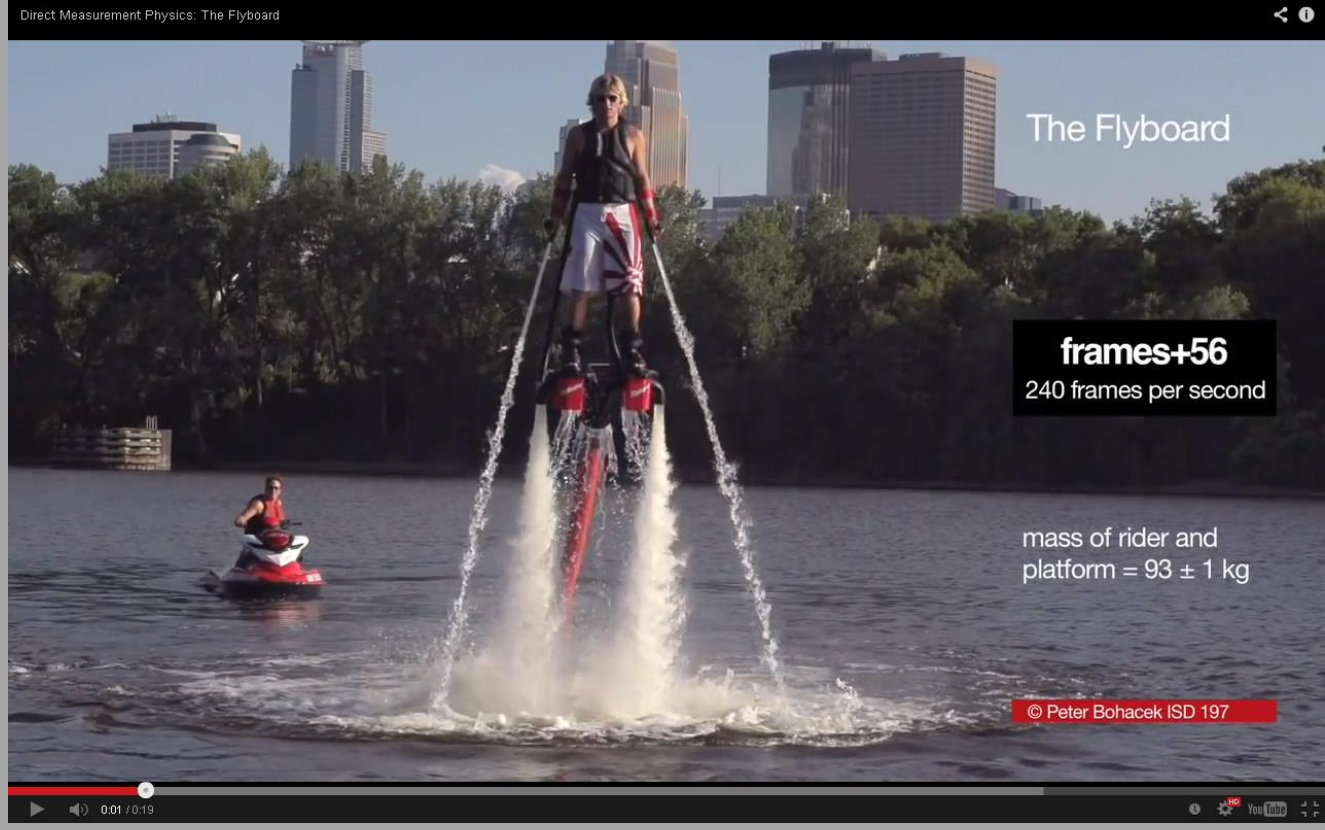
AAPT Summer Meeting
July 29, 2014
Minneapolis!

Matthew Vonk University of Wisconsin River Falls
Peter Bohacek Henry Sibley High School



DMV's are short videos of real events that are shot in such a way that students can directly measure important quantities.

Why Use DMV's?



They're fun

They're real

They're free

They are easy to use

They come in a variety of levels

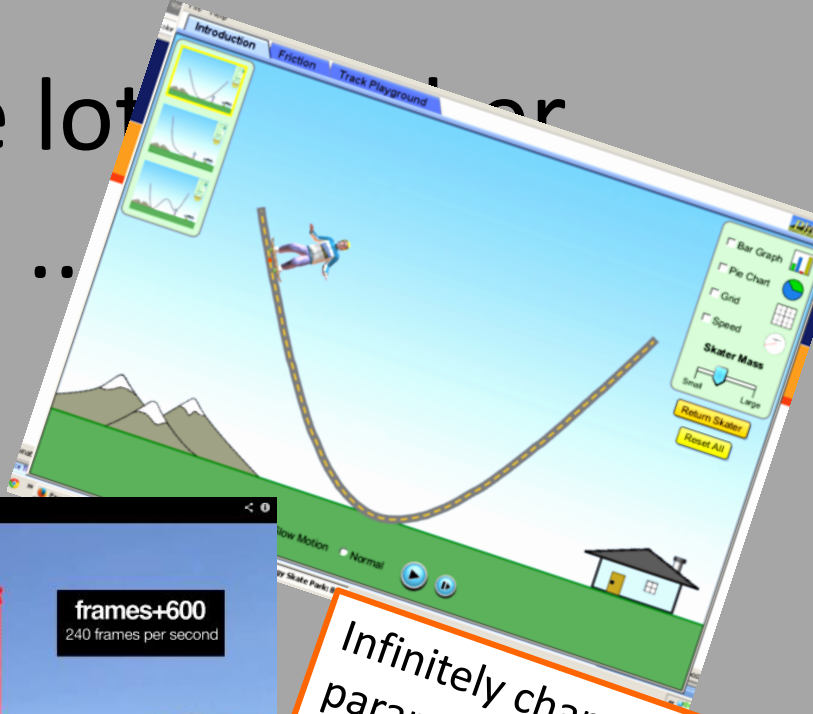
More than just mechanics

Students start to notice other things

Students ask about uncertainty

We ... there are lot ... er ... options. ...

Quality explanations & entertaining



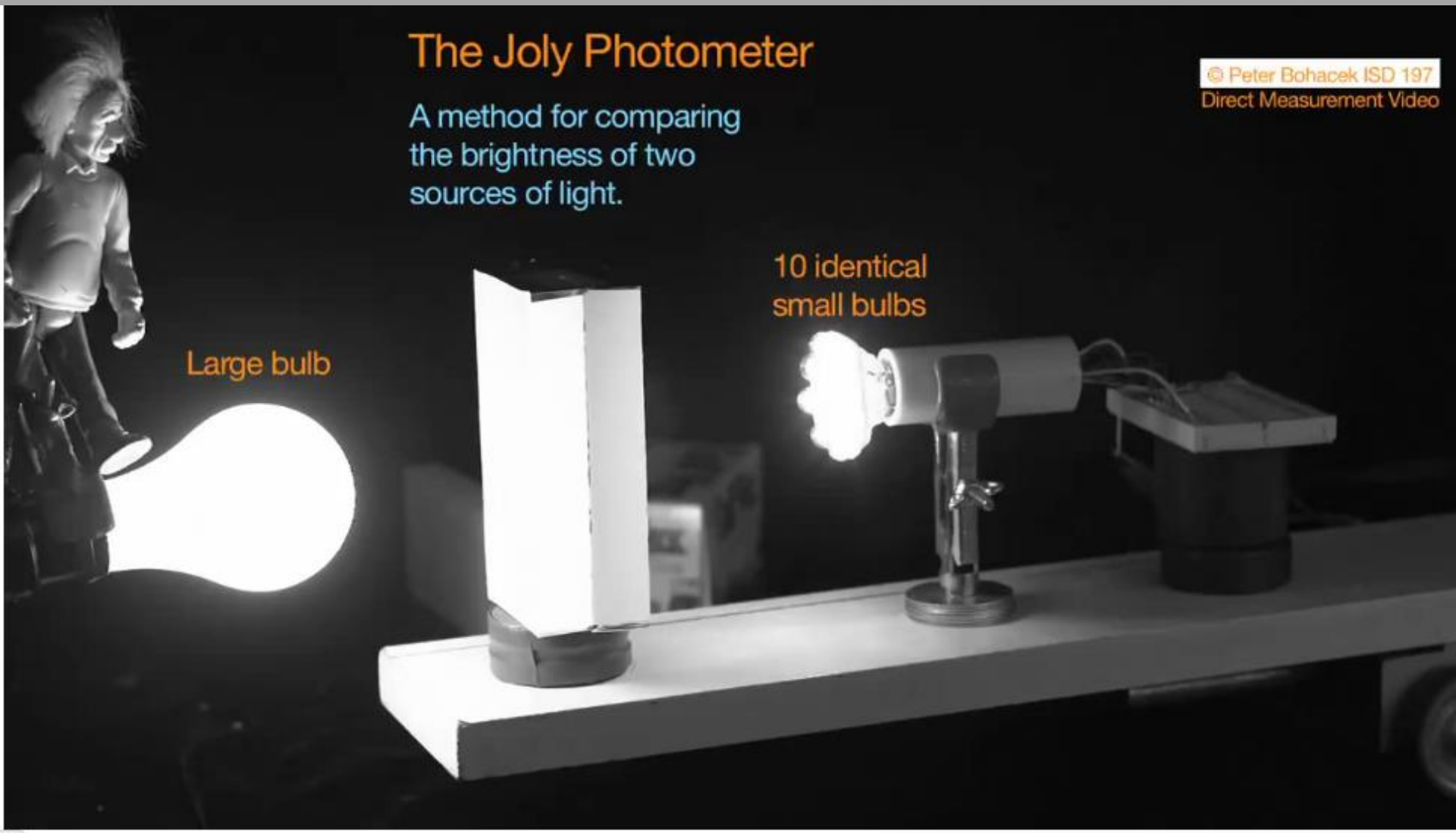
Infinitely changeable parameters.

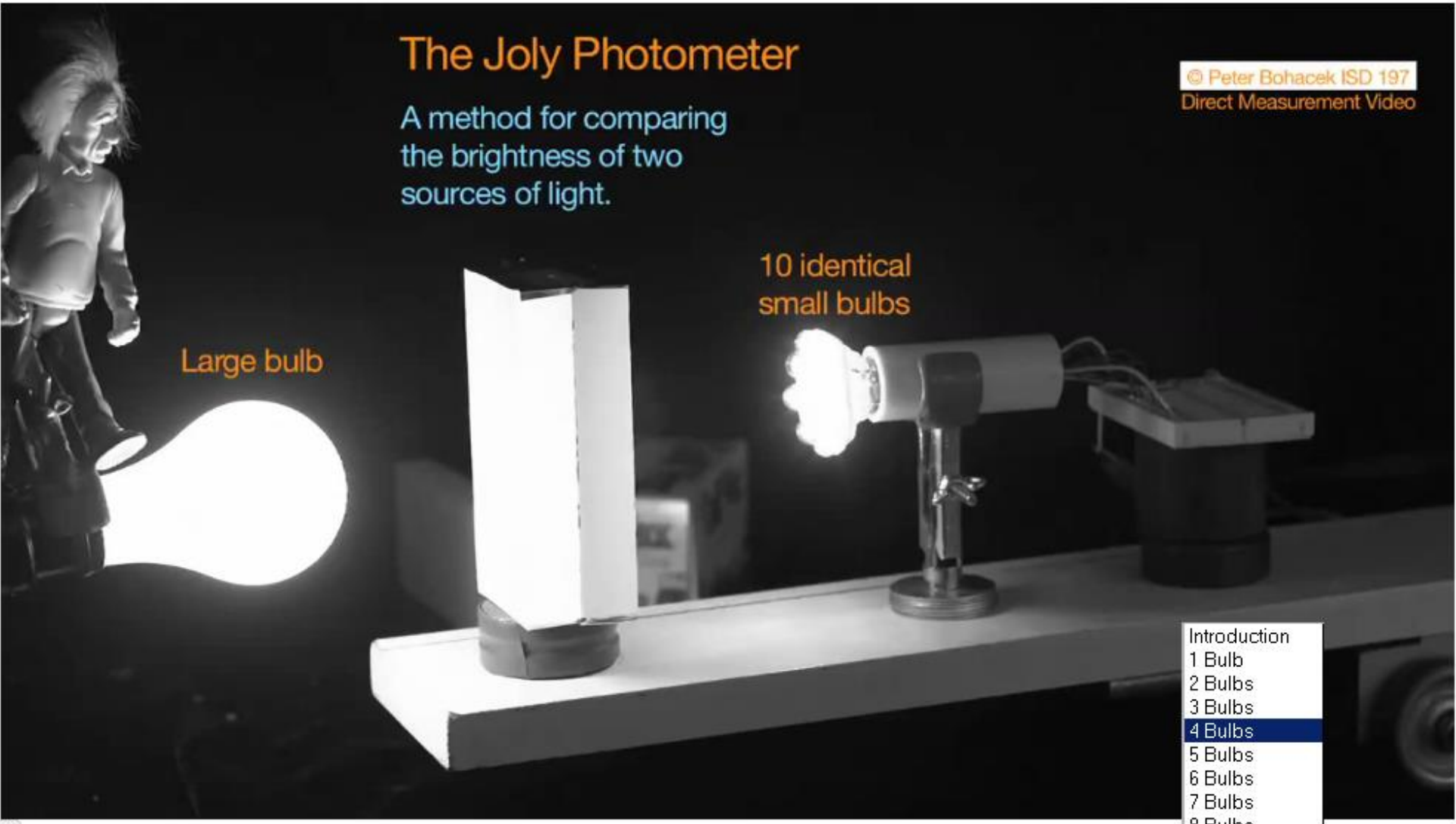
A uniform ladder 5 m long weighing 200 N is leaning against a smooth vertical wall with its base 3 m from the wall. The coefficient of static friction between the bottom of the ladder and the ground is 0.4. How far, measured along the ladder, can a 600 N man climb before the ladder starts to slip?

Easy to customize
Highly portable

Students take ownership

Coming Soon: New Tools that encourage science practices

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A method for comparing the brightness of two sources of light.
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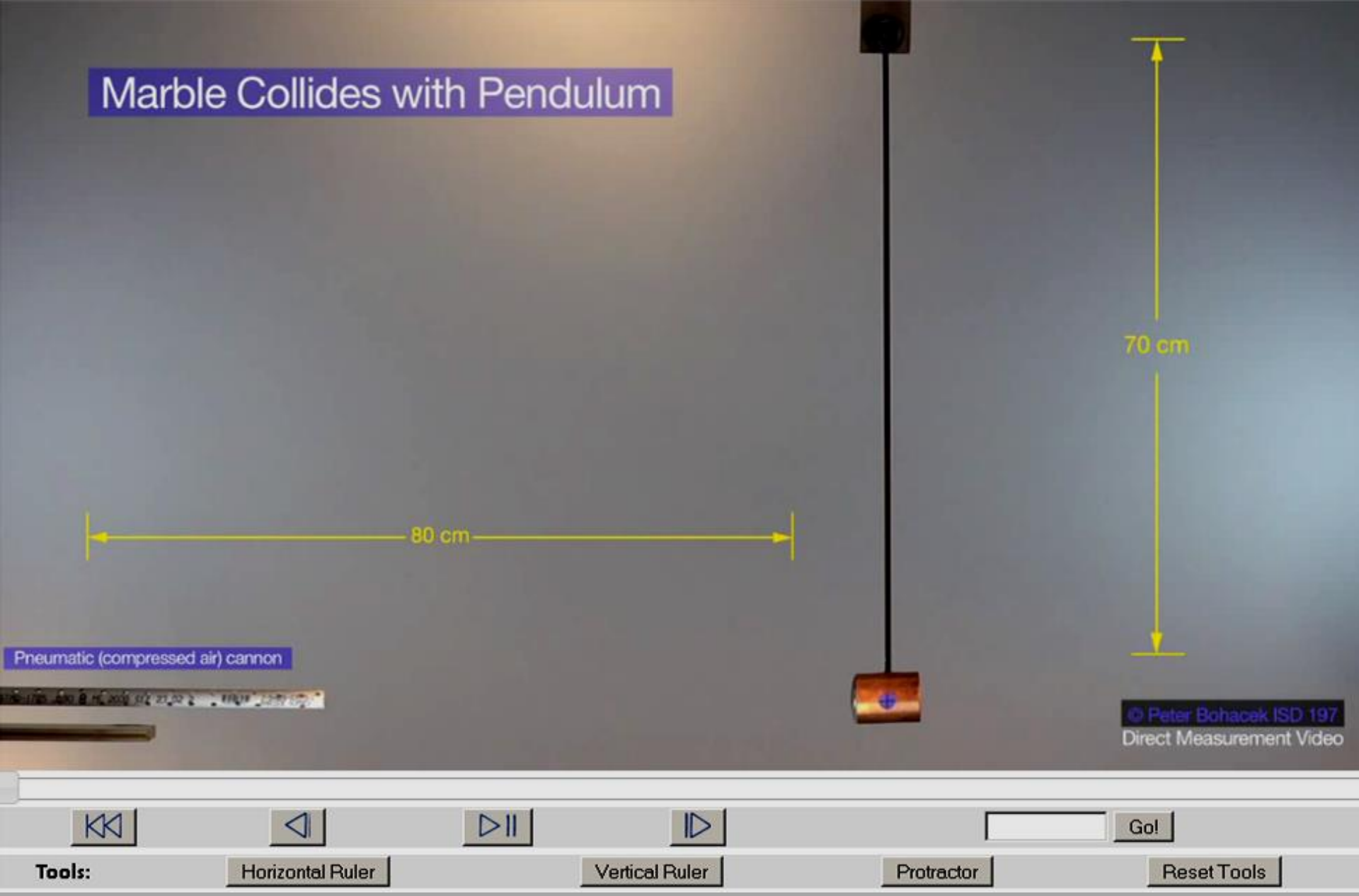

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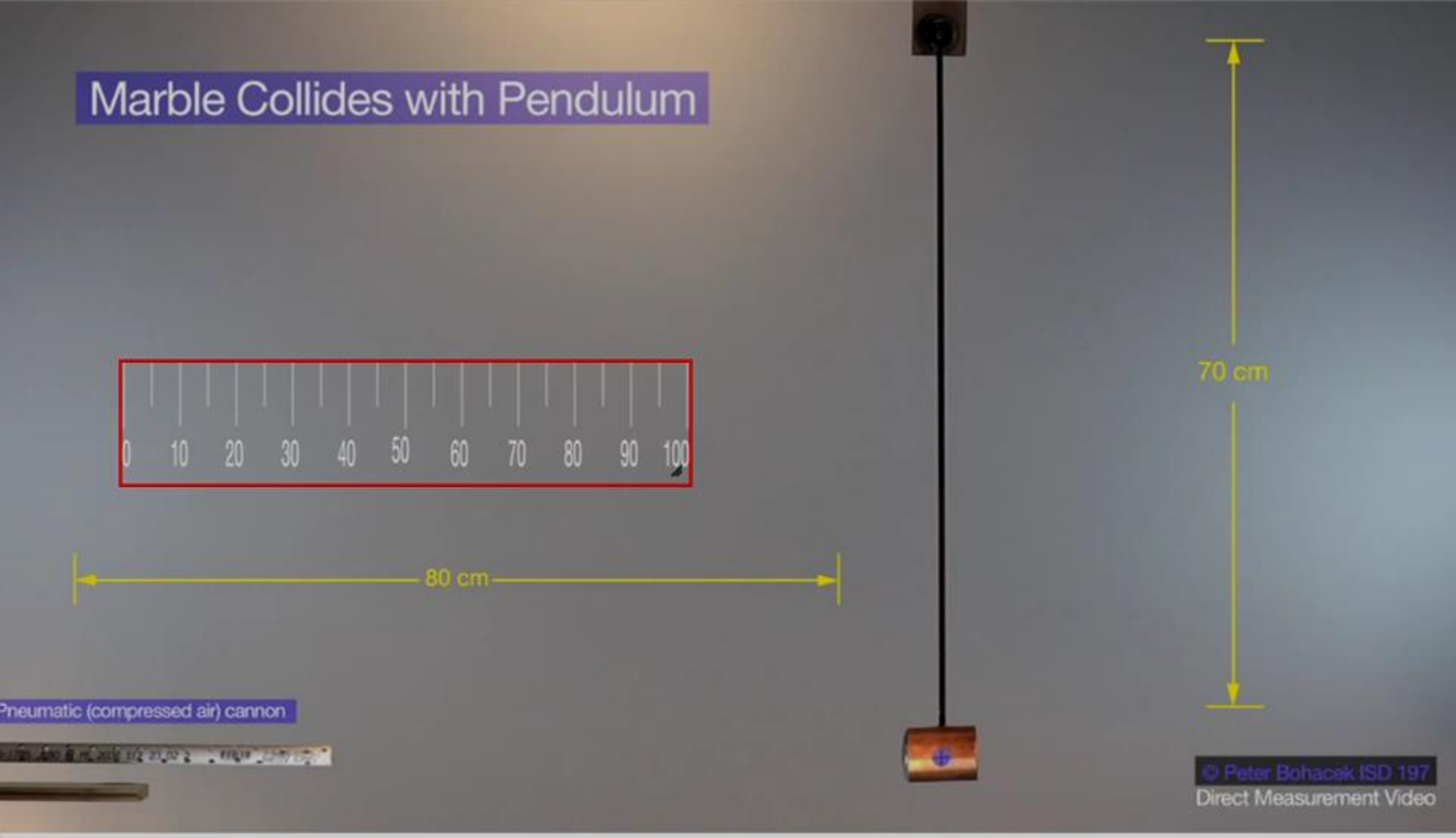
Tools: Horizontal Ruler | Vertical Ruler | Protractor | Reset Tools



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library.

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Motion | Sound | Light

One-Dimensional Motion


How fast is that? Ice skaters 1


How fast is that? July 4th cannon


How fast is that? Ping pong ball cannon


How fast is that? Roller coaster 1




Acknowledgements

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- http://www.hispanicphysicists.org/study/word.html

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