

PH 429: Reference Frames

Turntable Hockey

(<http://physics.oregonstate.edu/ph429/2013/mathematica/rfthockey.nb>)

Using the “Turntable Hockey” Mathematica worksheet on the course website, you will explore how rotation impacts 2-dimensional motion.

- Make sure you understand the default pictures.
- Try the canned examples at the end.
- Try your own initial configurations.
 - Compare initial velocities pointing in with those pointing out.
 - Compare initial velocities in the direction of rotation with those opposite the direction of rotation.
 - Compare different values of Ω .
- Try to produce a boomerang, a configuration which returns to its initial position as seen by the rotating observer.
- Try to produce a right angle, a configuration which makes a sudden turn of 90° as seen by the rotating observer.

1. Print out any single picture of a situation different from the preconfigured examples. Each group member should construct a different picture.

***Note:** It is difficult to print/save/export an animation. Instead, click on the picture and choose “Print Selection” from the File menu.*

2. Indicate the values for all parameters used on the printout.

3. Describe briefly in words how both the rotating and non-rotating observers would describe the motion.

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