Animation projects

Based on parametric equations, use Parametric plot to display the locus described by a set of parametric equations, and show animation for

(1) simple pendulum,
(2) 2-body planetary system,
(3) 2D projectile motion w/o friction.

Animation projects

- Given the simple equation of a wave,
- Animate 1D wave, w/o equation of motion of wave
- Animate 2D wave , w/o equation of motion of wave

Animation projects

- Animate a rotating rectangle about an vertical axis.
- Animate two rotating rectangles of different sizes about a common vertical axis with a common angular frequency.
- Animate two rotating rectangles of different sizes about a common vertical axis with a common angular frequency, but with a phase difference.

Animation projects

- Animate a 2D spiral.
- Animate an oscillating 2D spiral.
- Animate a 3D spiral.

Topic plan

- Simulate 1D elastic collision of two particles
- Simulate 2D elastic collision of two point particles
- Simulate 2D elastic collision of two disk of a common size
- Simulate 2D elastic collision of two disk of different sizes
- Simulate 3D elastic collision of two sphere of different sizes

Solving Equation of Motion and animating the motion

- Use NDSolve[] to solve the equation of motion, then animate the motion for

i) 2D projectile with friction
ii) driven, damped pendulum
iii) 2-body planetary system