Technote Drake-006: How to change the 2D plot parameters for the bouncing ball in 2D example

Overview

This document describes how to change the 2D plot parameters for the bouncing ball in 2D example.

Procedure

Step 01.00: Modifying the matlab code to change 2D plot parameters.

Step 01.01: Review the BallVisualizer2D.draw(obj,t,y) function.

This is set in the BallVisualizer2D.draw(obj,t,y) function:

```
function draw(obj,t,y)
  hFig=sfigure(25);  % select figure 25 without forcing it to the front
  clf;
  axisAnnotation('ellipse',...                % draw circle
    [y(1), y(2), 0, 0] + obj.r*[-1,-1,2,2],...  % [x y w h]
    'FaceColor','r');                         % make it red
  line([-5,5]*obj.r,[0,0],'Color','k','LineWidth',1.5);
  axis equal;
  axis(obj.r*[-5 5 -.5 9.5]);
end
```

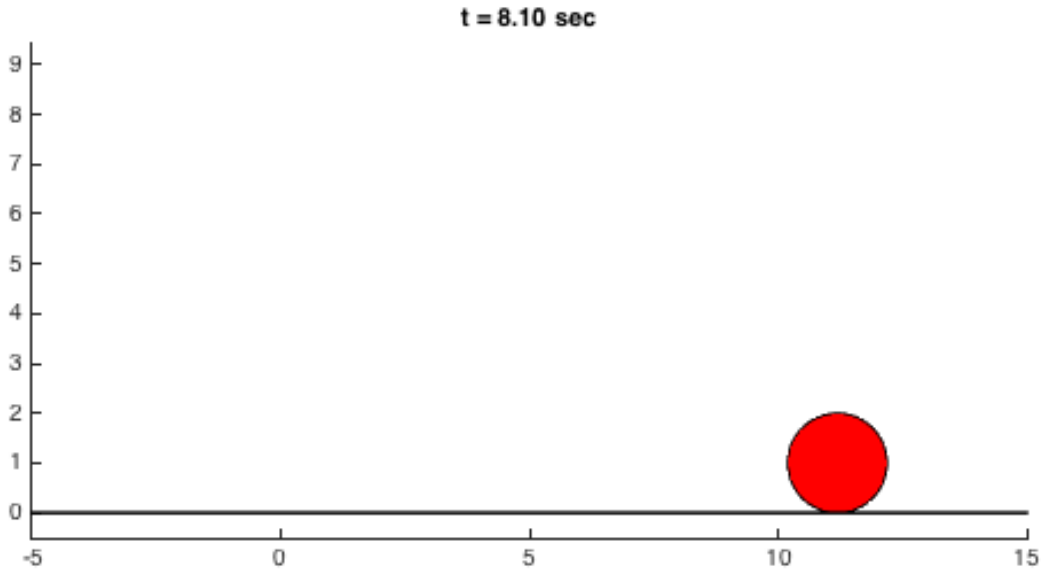
Step 01.02: Increase the extent of the 2D plot along the x-axis.

Change the line x-axis extent as follows (highlighted in red), to see the ball animate a little more and come to a stop:

```
function draw(obj,t,y)
  hFig=sfigure(25);  % select figure 25 without forcing it to the front
  clf;
  axisAnnotation('ellipse',...                % draw circle
    [y(1), y(2), 0, 0] + obj.r*[-1,-1,2,2],...  % [x y w h]
    'FaceColor','r');                         % make it red
  line([-5,15]*obj.r,[0,0],'Color','k','LineWidth',1.5);
  axis equal;
  axis(obj.r*[-5 15 -.5 9.5]);
end
```

The run the simulation, and set the simulation time extent to [0 15] as follows:

```
>> b = BallPlant2D;
>> v = BallVisualizer2D(b);
>> x = b.simulate([0 15],[1;-5;5;2;0]);
>> v.playback(x);
```



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