

# Saving an Animation to a Video File

## Steps for Creating an mp4 Video

**Step 1.** Create a figure and specify the resolution in pixels

The following code specifies a figure resolution of 640x480 pixels:

```
figure('units','pixels','position',[0 0 640 480])
```

**Step 2.** Open a video file

The following code will create an mp4 video file called “test.mp4” with a playback speed of 30 frames/second (the default).

```
vid_file = VideoWriter('test.mp4','MPEG-4');  
vid_file.FrameRate = 30;  
open(vid_file);
```

### Step 3. plot each animation frame and save to the video file.

The following code assumes the  $x(j)$  and  $y(j)$  arrays have already been created and store the  $(x,y)$  coordinates of a moving object.

```
for j=1:length(x)

    % Plot and set axis limits
    plot(x(j),y(j),'ro');
    xlim([-0.5 2.5])
    ylim([-1.5 1.5])

    % write plot to the video file
    FRAME(j) = getframe(gcf);
    writeVideo(vid_file, FRAME(j));

end
```

### Step 4. Close video file after all the frames have been written.

This goes after the for loop:

```
close(vid_file);
```

```

##### Initialize Video File #####
figure('units','pixels','position',[0 0 640 480]) % set plot size in pixels
vid_file = VideoWriter('test.mp4','MPEG-4'); % use mp4 format
vid_file.FrameRate = 30; % playback speed
open(vid_file); % open video file

##### Calculate (x,y) positions of moving ball #####
x = linspace(0,2,200);
y = sin(2*pi*x);

##### Loop Over Movie Frames #####
for j=1:length(x)

    % Plot position of ball and its reflection around x axis
    plot(x(j),y(j),'ro','MarkerSize',20,'MarkerFaceColor','r');
    hold on
    plot(x(j),-y(j),'ro','MarkerSize',20,'MarkerFaceColor','g');
    hold off

    % set axis limits and hide axes
    xlim([-0.5 2.5])
    ylim([-1.5 1.5])
    axis off

    % write plot to video file
    FRAME(j) = getframe(gcf);
    writeVideo(vid_file, FRAME(j));

end

##### Close Video File #####
close(vid_file);

```

**Example program that creates a video of two moving balls.**