Program Report

Ball bouncing on an oscillating Rigid Surface

Output for different values:

Chart, bar chart, histogram

Description automatically generatedChart, histogram

Description automatically generatedChart, line chart

Description automatically generatedChart, histogram

Description automatically generated

Bifurcation graph for the oscillating rigid surface

Chart, histogram

Description automatically generatedChart, histogram

Description automatically generated

Ball falling on a spring

Without and With Damping respectively

Chart, line chart

Description automatically generatedChart, line chart, histogram

Description automatically generated

Ball falling on a periodically oscillated spring

A picture containing diagram

Description automatically generatedChart

Description automatically generated

Surface following a parametrically oscillated wave equation using a PDE solver library to produce phase diagram

Chart, histogram

Description automatically generated

Surface following a parametrically oscillated wave equation using forward Euler method with a ball falling on it under gravity

* Check Videos (Walking, Local Instability excitement)

Run the code to see the graphic output of the following:

* Surface linked by springs with a ball falling on it under gravity
* Surface following the wave equation with a ball falling on it under gravity
  + Leap Frog Method
  + Spectral Method without the ball
* Surface following the wave equation added with a linear parametric oscillatory term and a falling ball