# 3D VPython Environment First Runs

## Run 1, No Damping

Text

Description automatically generated

Chart

Description automatically generated

Chart, line chart

Description automatically generated

## Run 2 With Damping on Blue Mass

Text

Description automatically generated

Chart

Description automatically generated

Chart, line chart

Description automatically generated

## Run 3, Double Mass Oscillator

An example when delta\_t was too small to avoid divergence behavior (0.01s). This occurred when the blue mass (which started on the left side) moved through the white mass and switched sides. Technically the behavior is still physically correct besides a mass phasing through another mass.

Text

Description automatically generated

Chart

Description automatically generated

Chart, histogram

Description automatically generated

Using 0.001s delta\_t:

Background pattern

Description automatically generated

Graphical user interface, application

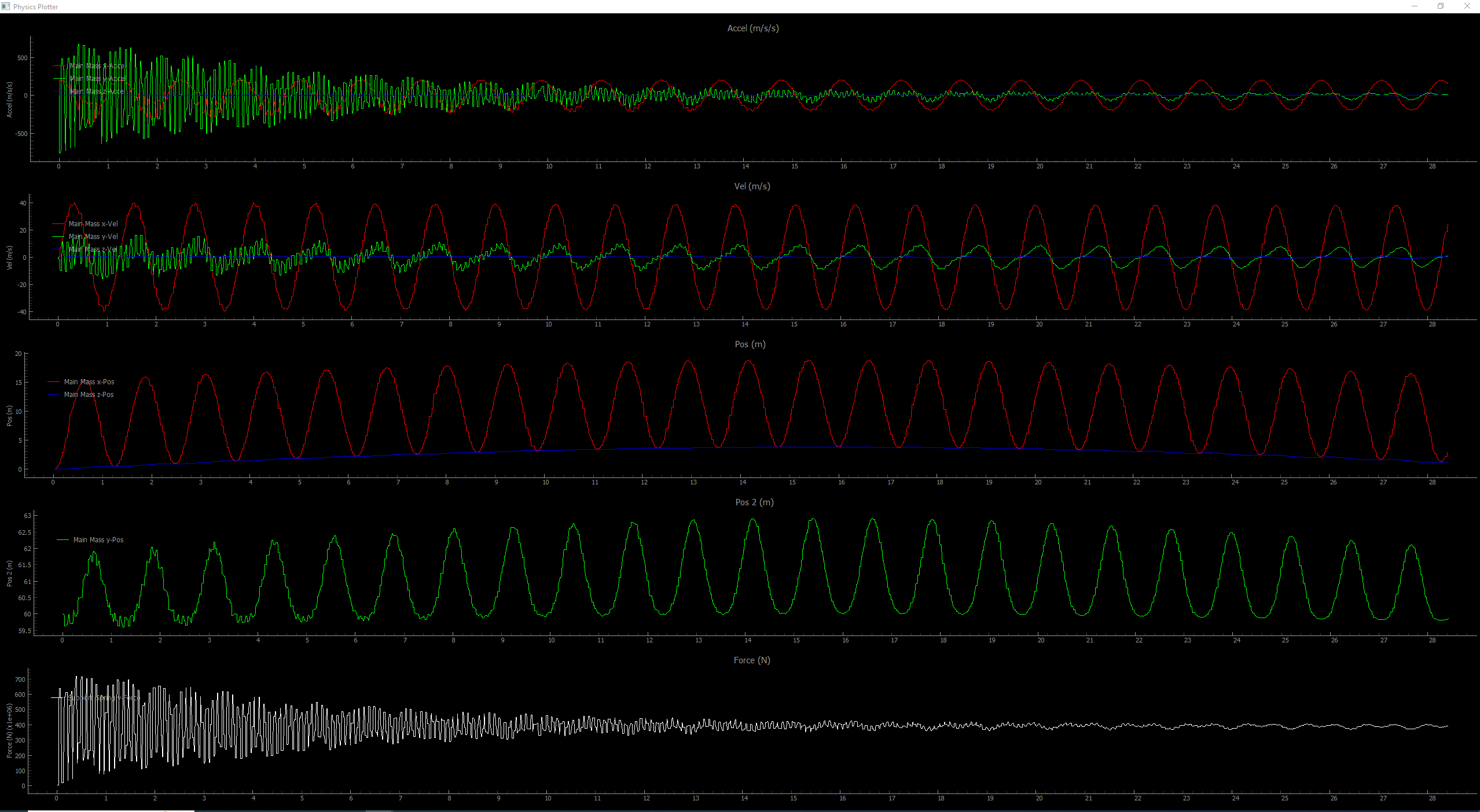
Description automatically generated

# Changed Matplotlib to PyQTGraph – 2024/07/10

Background pattern

Description automatically generated

# Retesting With External Forces



Background pattern

Description automatically generated

FFT

Graphical user interface

Description automatically generated with low confidence

Diagram

Description automatically generated with medium confidence