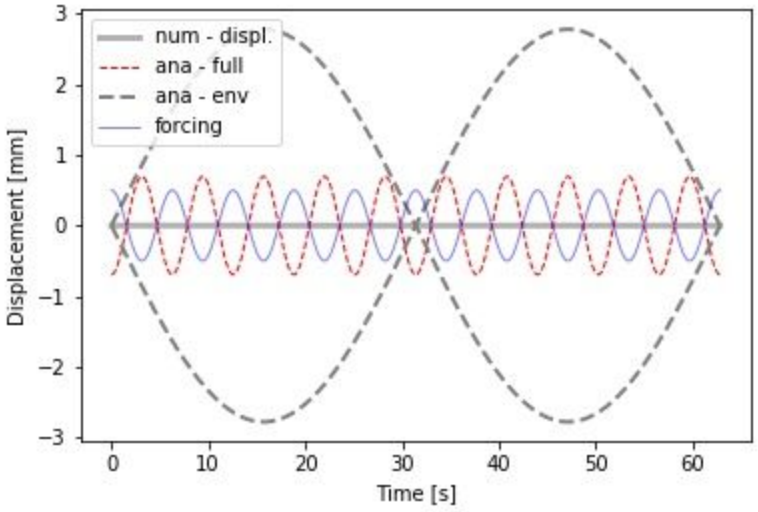
Bruno Lopez

Earth 119

Hw #5

1b.) c1 is at 0, while c2 is at 1, after solving for c1 and c2

1c.) Included as a comment under line 87

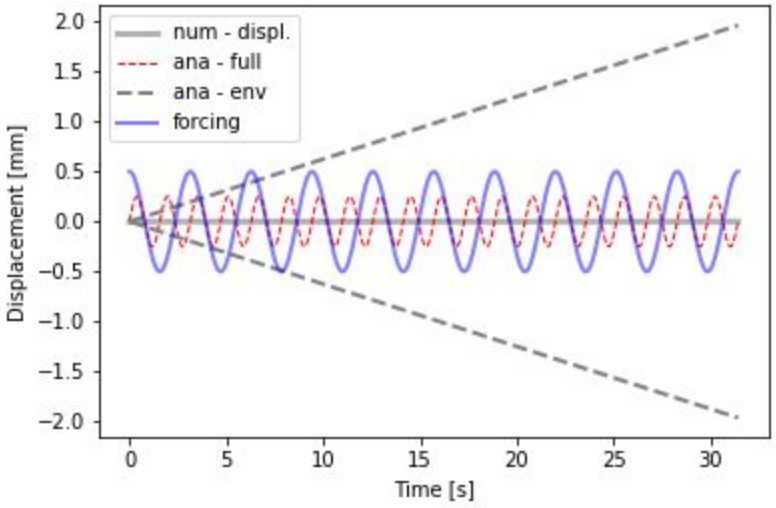


1f.c) Under 1 second time steps, the forward Euler provides accurate solutions

Basically, the graph figures a sinusoidal shape, which is what is expected from an oscillating system.

Natural Frequency

1g.) There is a natural frequency, it resonates basically. Think about it like when you tap a wine glass at a fundamental frequency, it shakes naturally



1j.) Hooke's law would not work realistically in this case because we would assume that some of the head would be lost forever. That does not happen when omega is approximate to omega knot. I think that the system would eventually come to a stop after energy is lost.

We are exploring Hooke's law in this case, with the assumption that omega = omega knot. But this probably would result in an infinite resonance in this case. So there would not be a linear force, maybe an infinite relationship in this case.