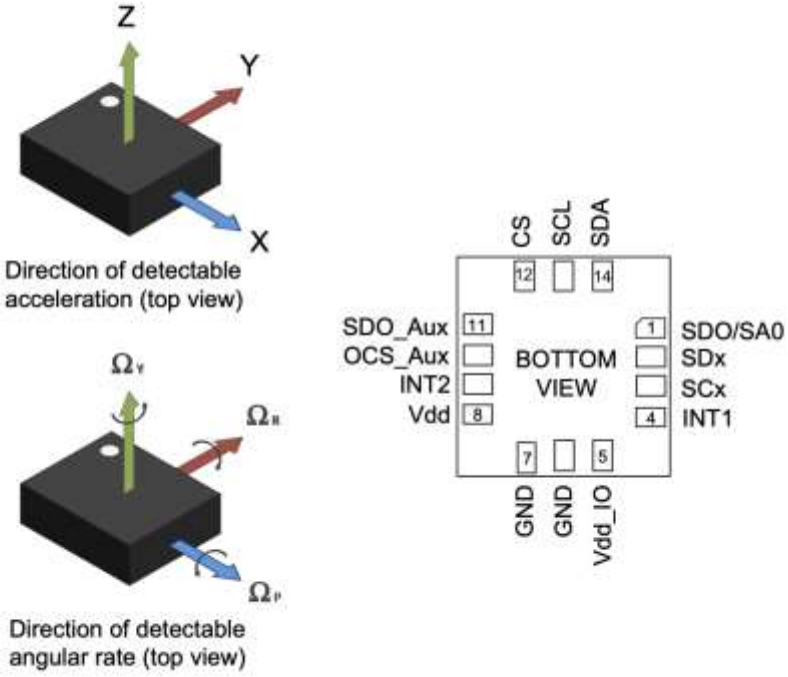
Six Flags

This project is not sponsored by Six Flags

Acceleration to Displacement, Simple Math?

Figure 4. **Pin connections**



Adafruit 9-DOF Absolute Orientation IMU Fusion Breakout - BNO055

Product ID: 2472

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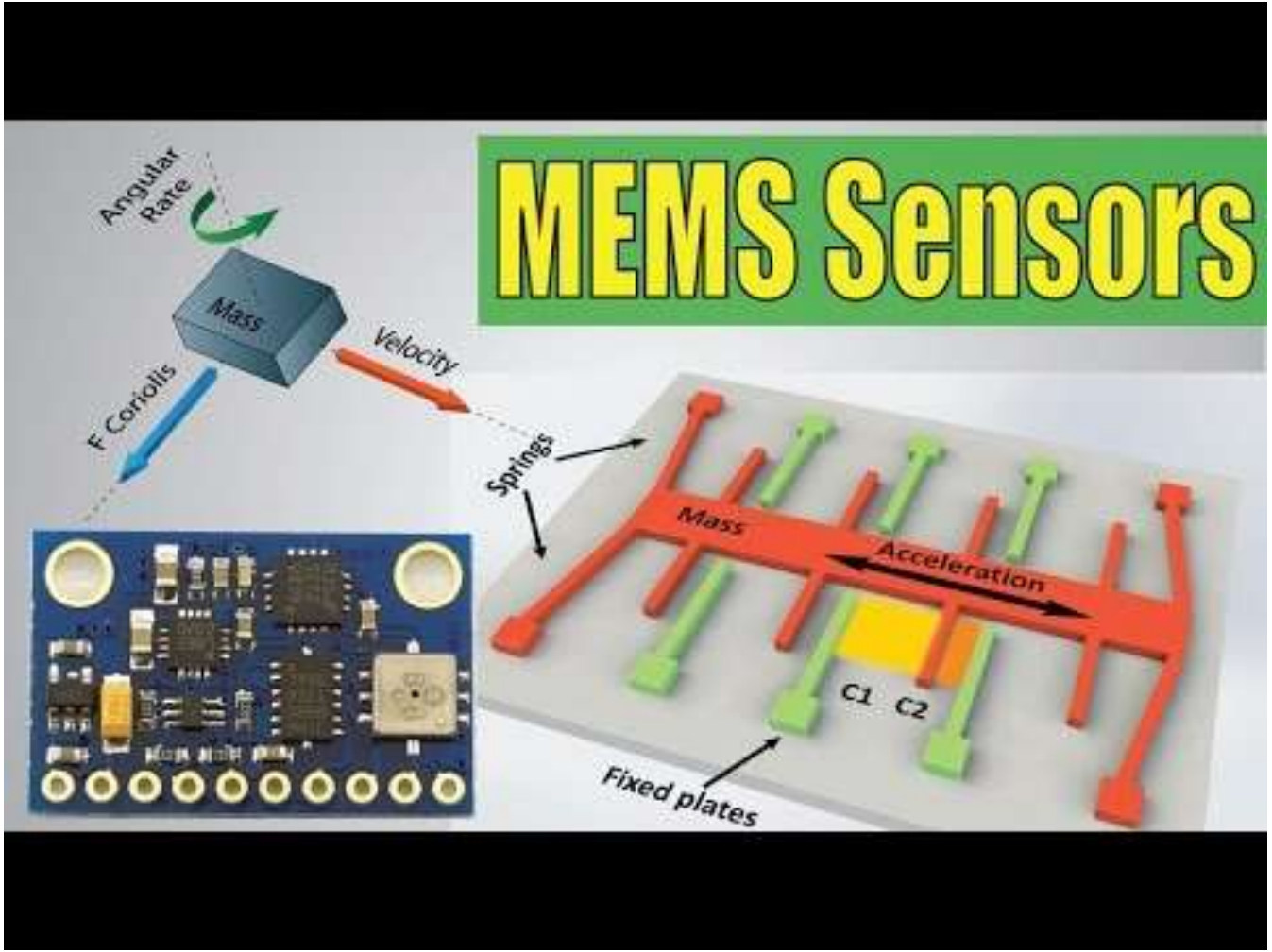
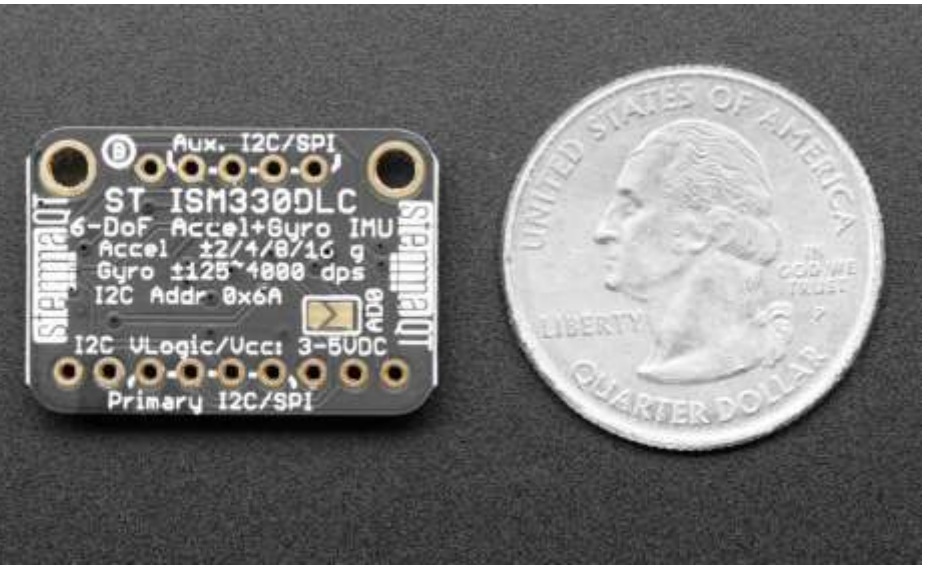
Description

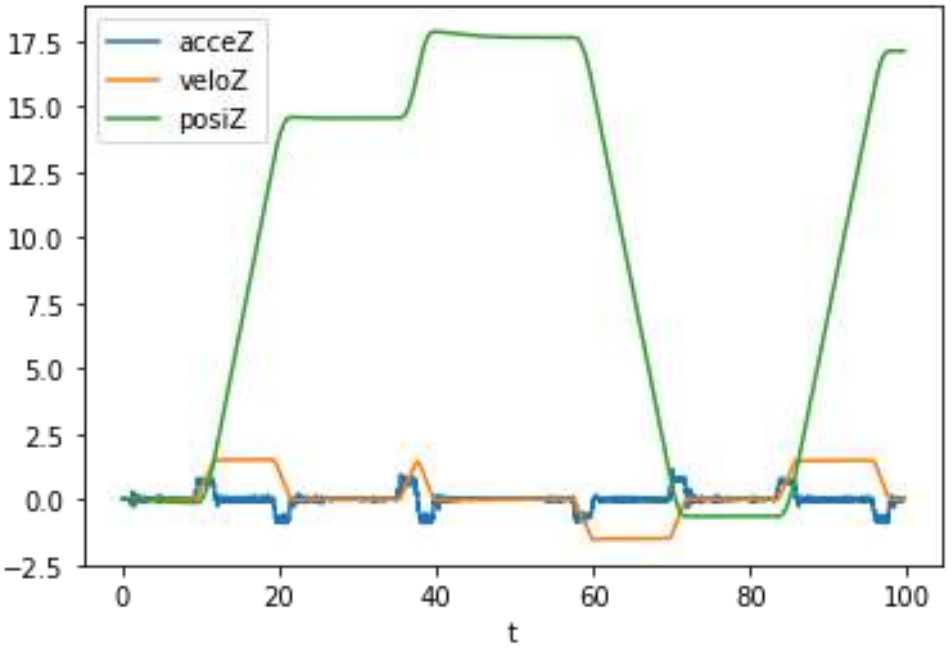
Technical Details

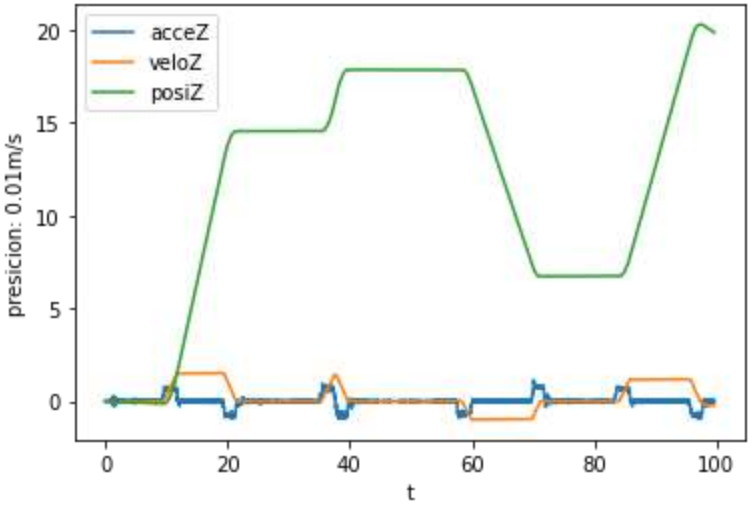

MEMS Sensors
Angular Rate
Mass
Velocity
F Corrolis
Springs
Mass
Acceleration
C1
C2
Fixed plates

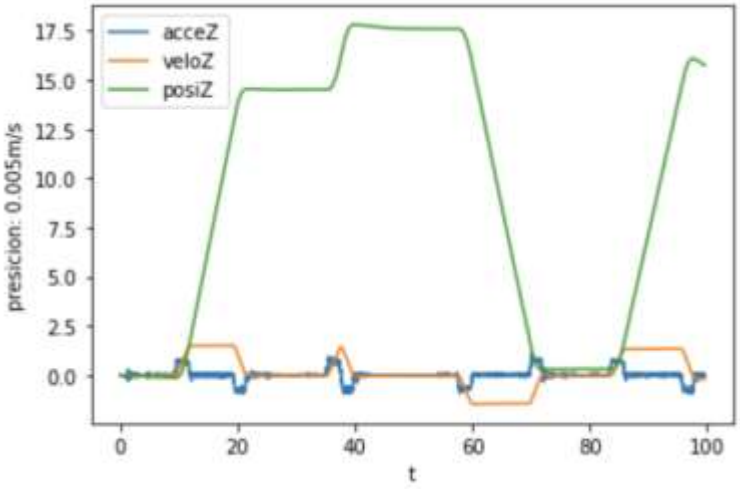


- Raspberry Pi Pico
- Raspberry Pi 4 Model B
- 6 DoF IMU

1D data


acceZ
veloZ
posiZ
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
−2.5
0
20
40
60
80
100
t


acceZ
veloZ
posiZ
presicion: 0.01m/s
t


acceZ
veloZ
posiZ
presicion: 0.005m/s
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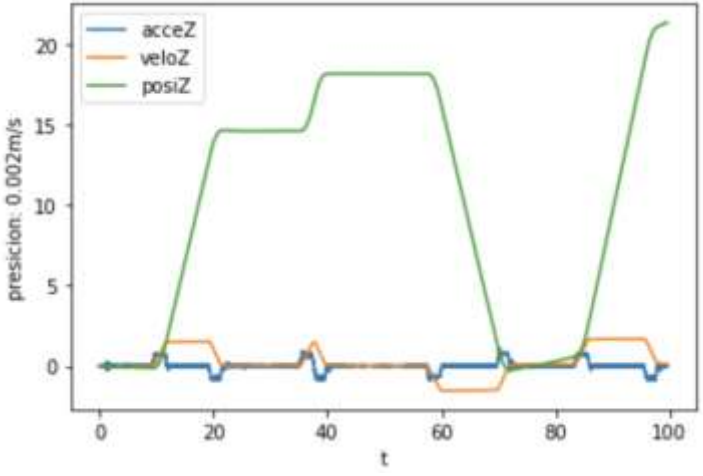
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posiZ
presicion: 0.002m/s
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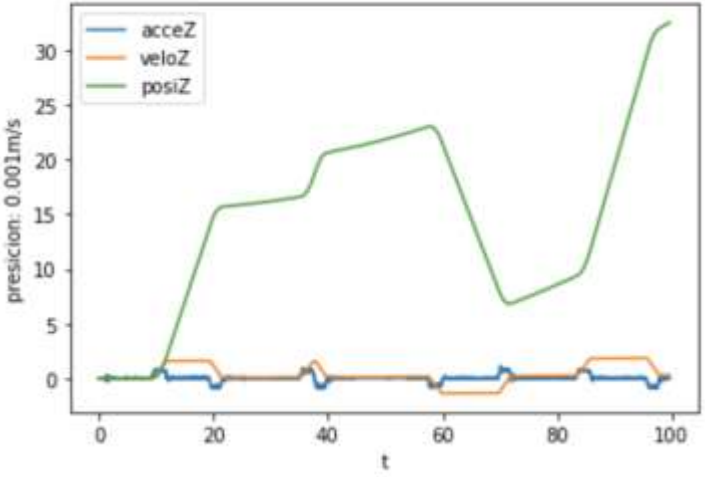
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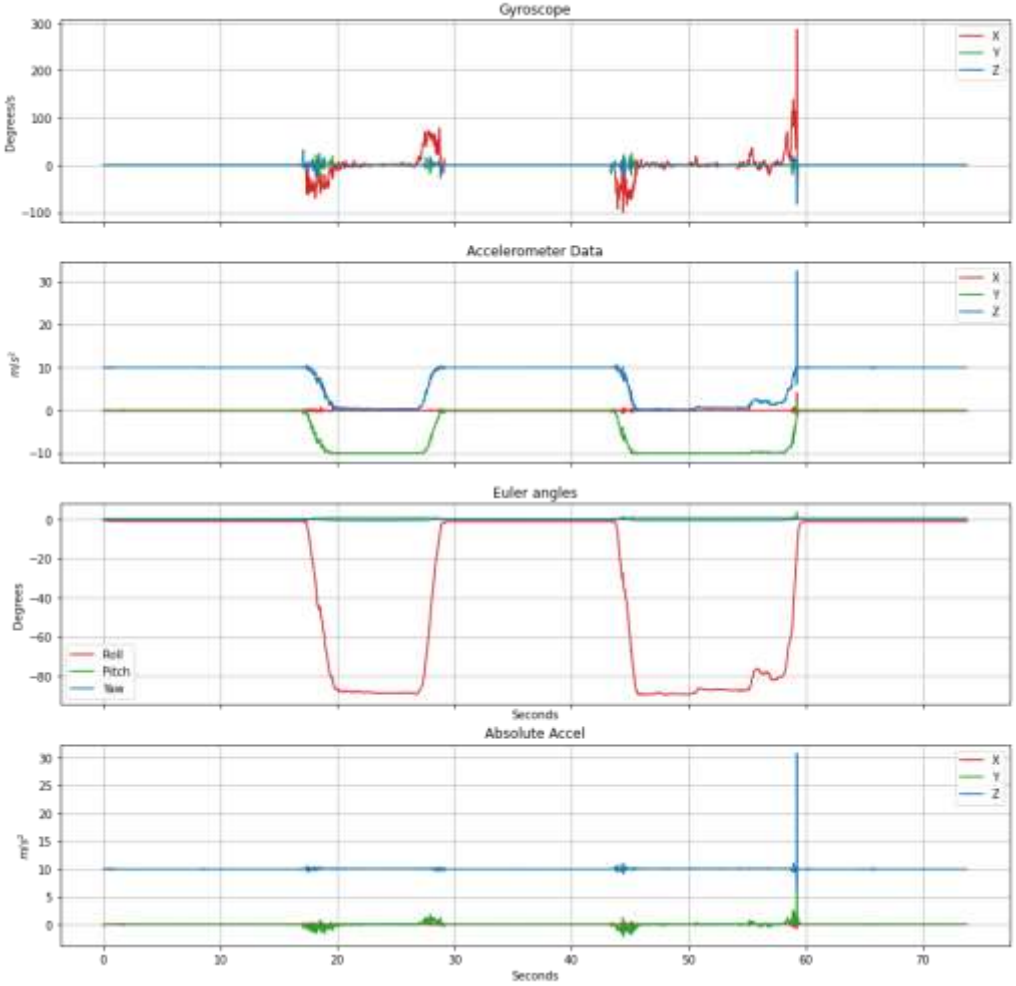
veloZ
posiZ
presicion: 0.001m/s
t

3D…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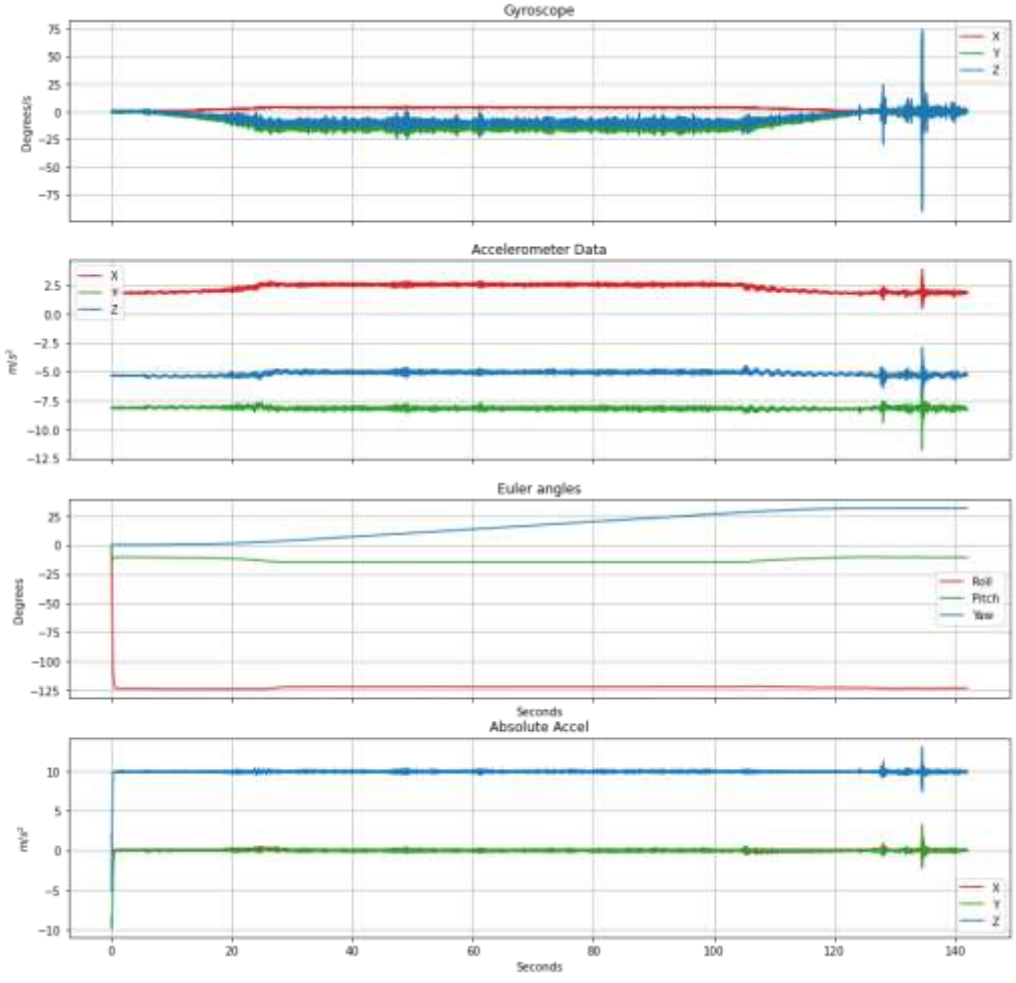
Degrees/s
X
Y
Z
Accelerometer Data
m/s²
X
Y
Z
Euler angles
Degrees
Roll
Pitch
Yaw
Seconds
Absolute Accel
m/s²
X
Y
Z
Seconds

Six Flags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Degrees/s
X
Y
Z
Accelerometer Data
m/s²
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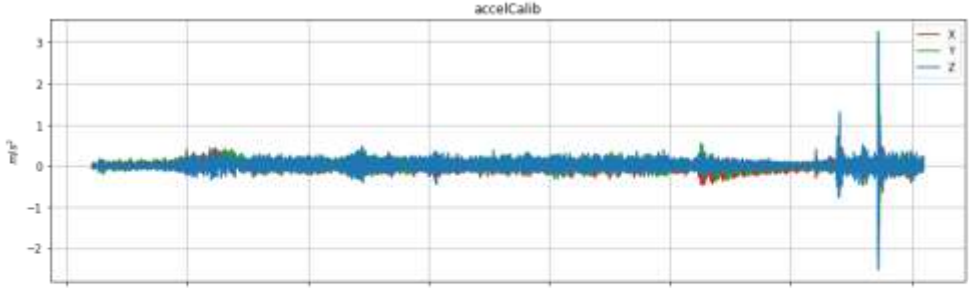
Y
Z
Euler angles
Degrees
Roll
Pitch
Yaw
Seconds
Absolute Accel
m/s²
X
Y
Z
Seconds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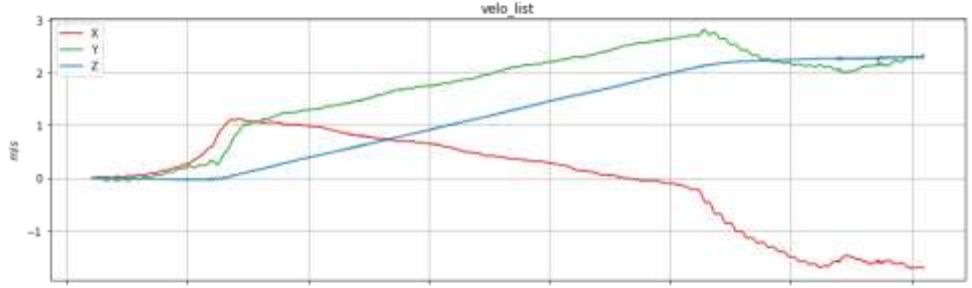
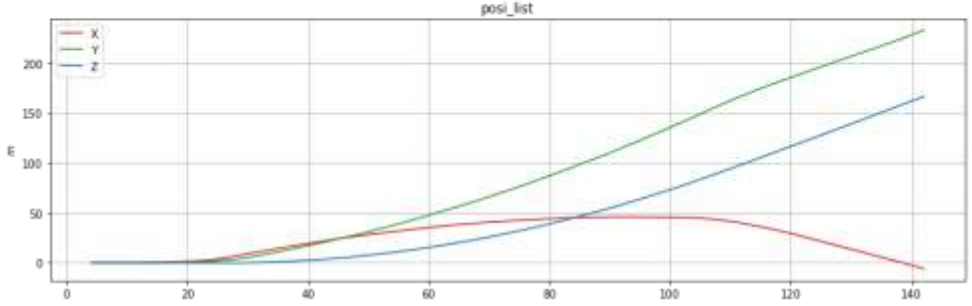
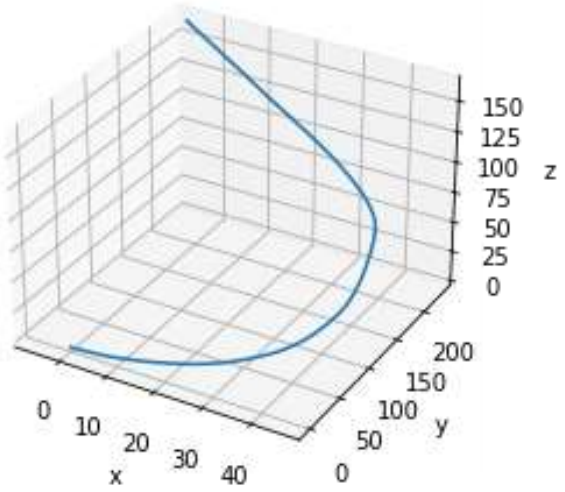
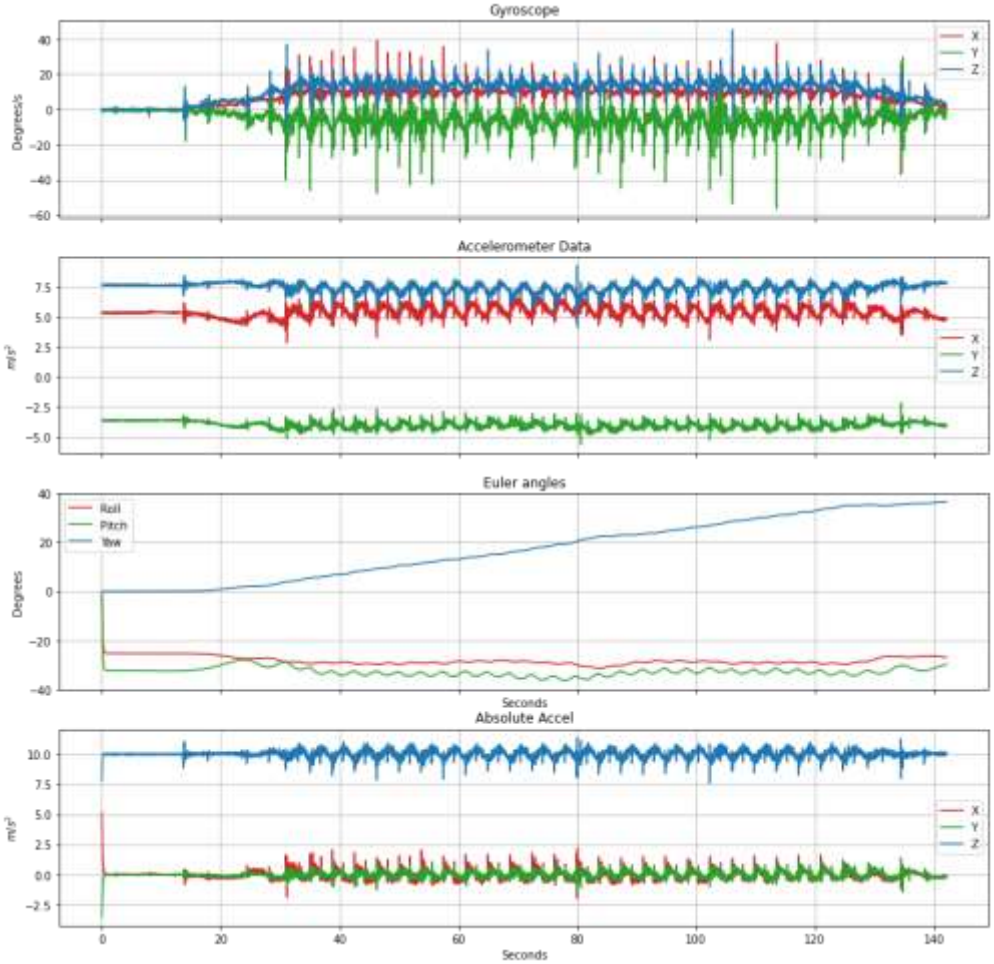
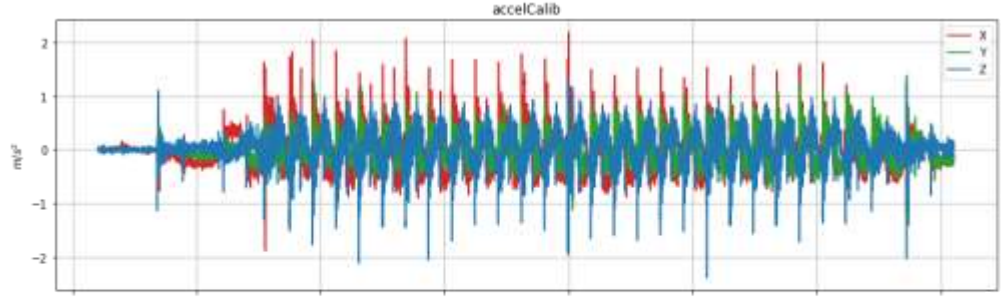
X
Y
Z
m/s²

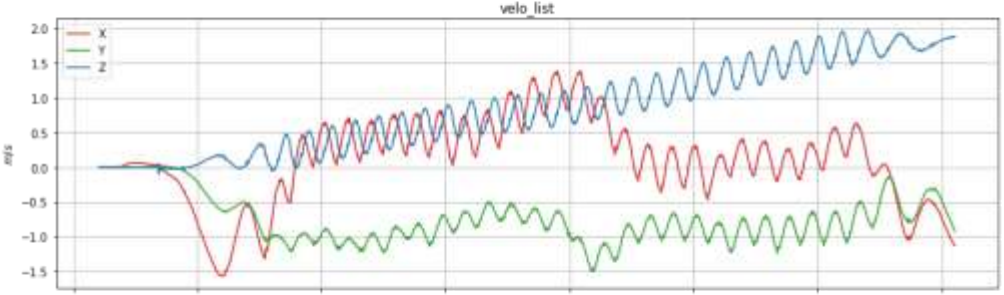

velo_list
X
Y
Z
m/s


posi_list
X
Y
Z
m


z
x
y


Gyroscope
Degrees/s
X
Y
Z
Accelerometer Data
m/s²
X
Y
Z
Euler angles
Degrees
Roll
Pitch
Yaw
Seconds
Absolute Accel
m/s²
X
Y
Z
Seconds


accelCalib
X
Y
Z
m/s²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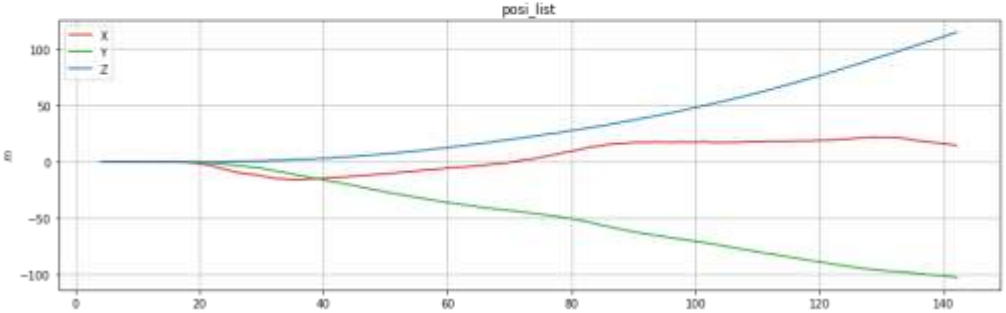
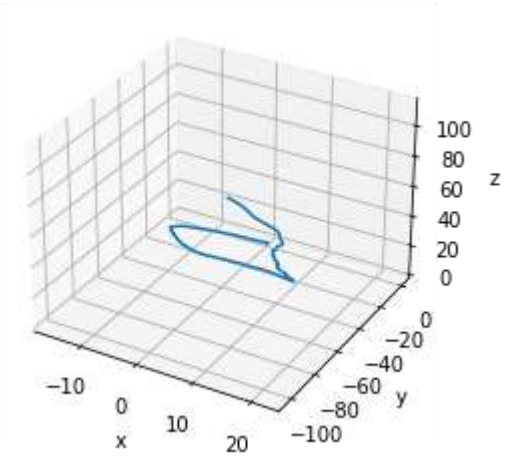
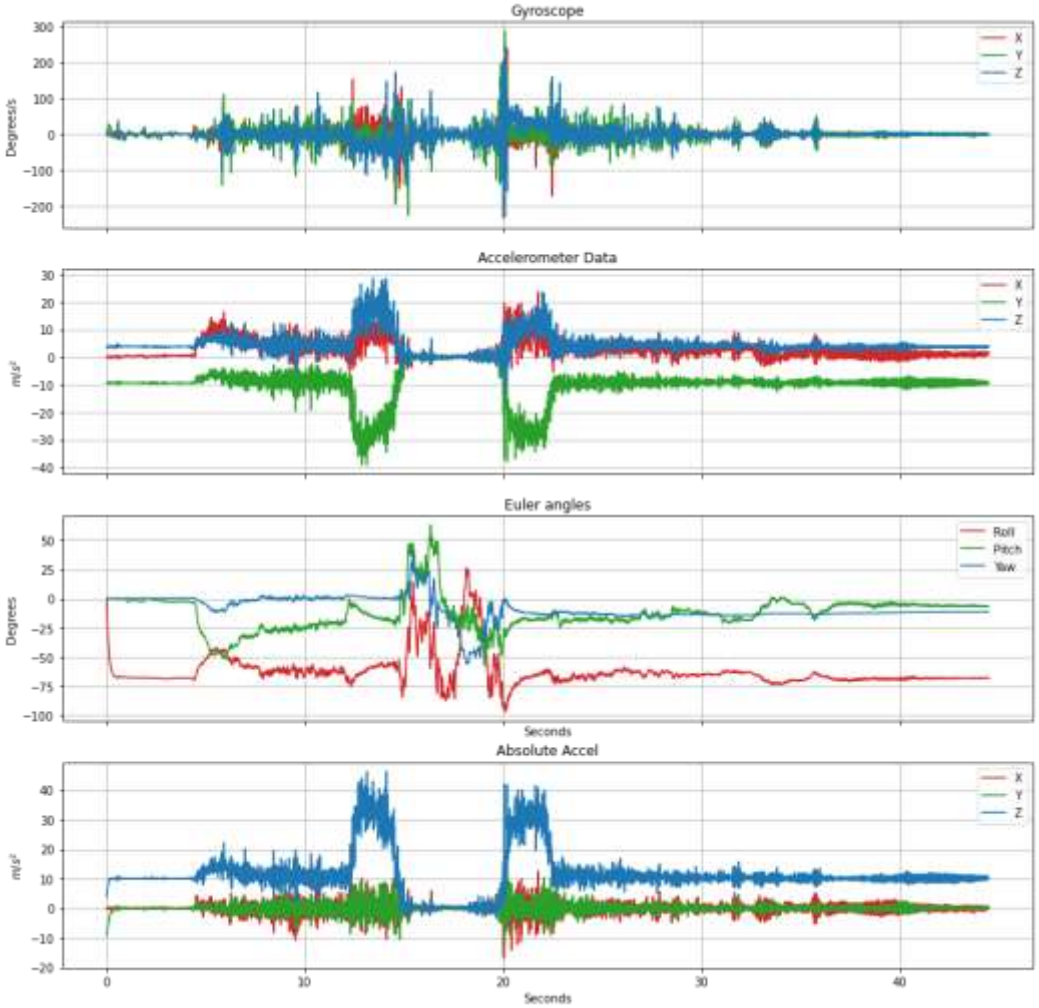
X
Y
Z
m/s


posi_list
X
Y
Z
m


z
y
x

Superman


Gyroscope
Degrees/s
X
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Z
Accelerometer Data
m/s²
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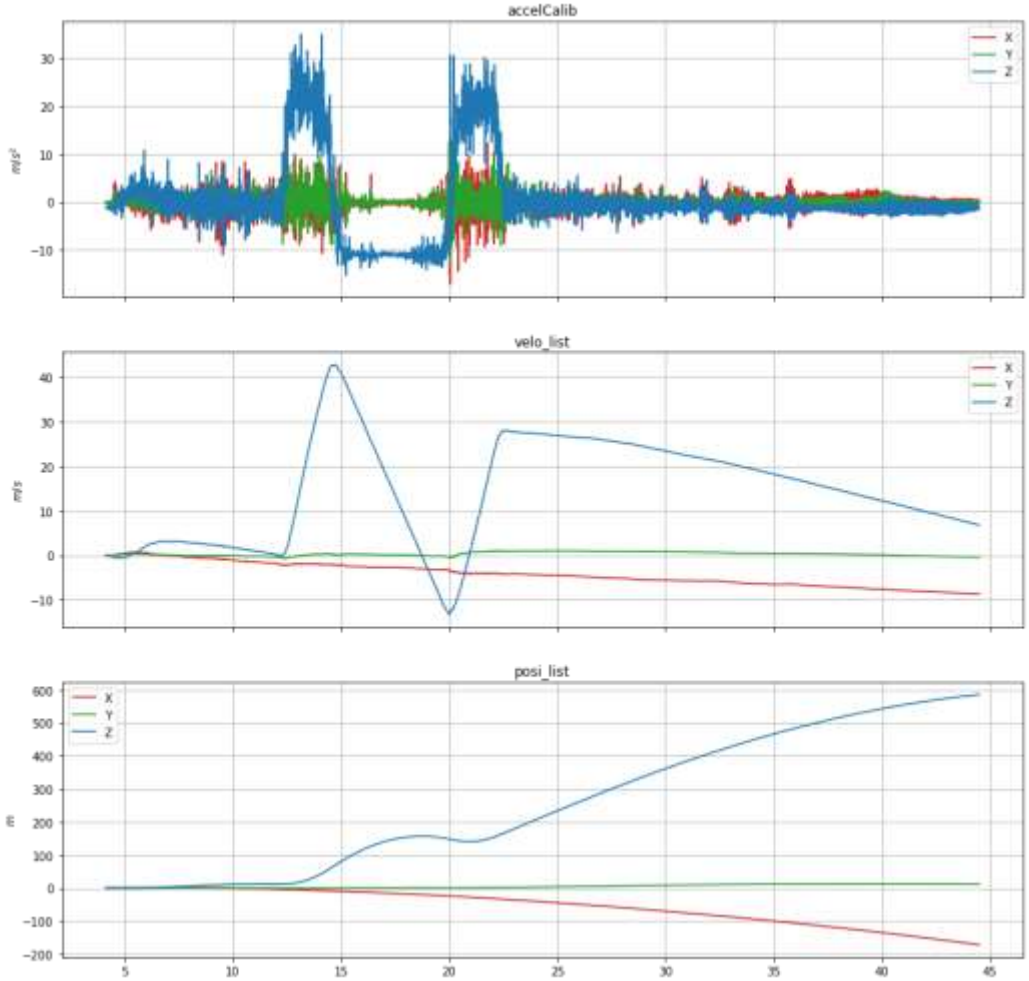
Euler angles
Degrees
Roll
Pitch
Yaw
Seconds
Absolute Accel
m/s²
X
Y
Z
Seconds


accelCalib
X
Y
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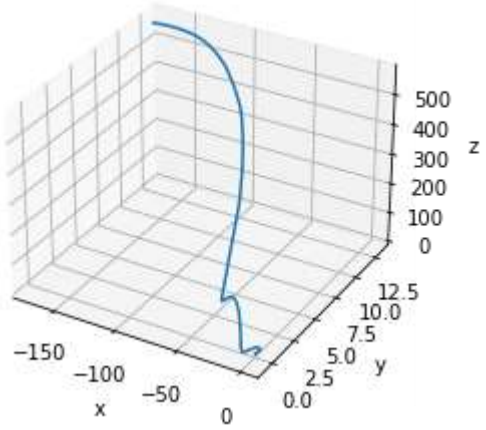
m/s²
velo_list
m/s
posi_list
m


500
400
300
200
100
0
z
12.5
10.0
7.5
5.0
2.5
0.0
y
−150
−100
−50
0
x

More in Notebook

Conclusion

1D worked well

Sampling rate is the major limitation…