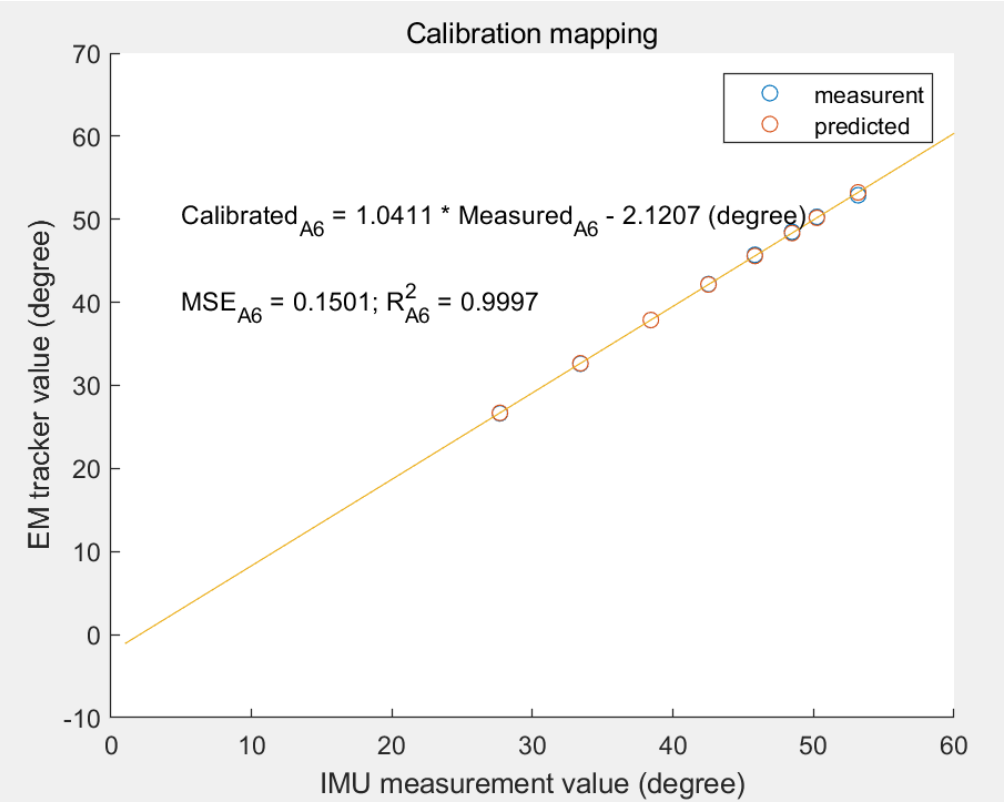
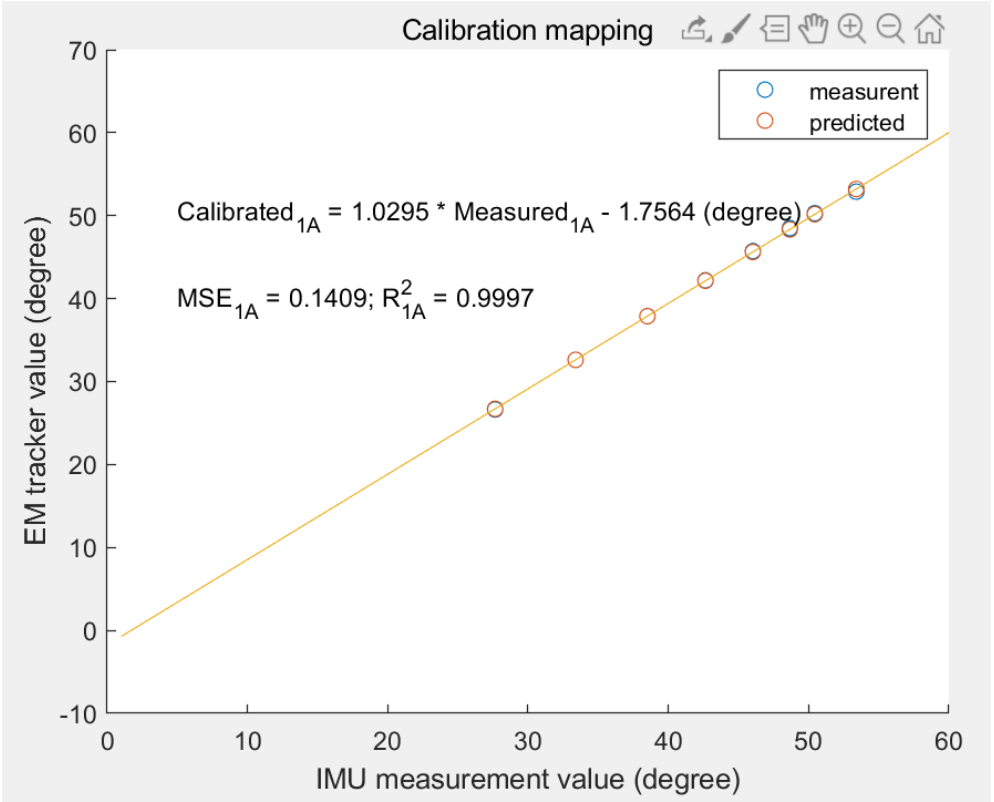
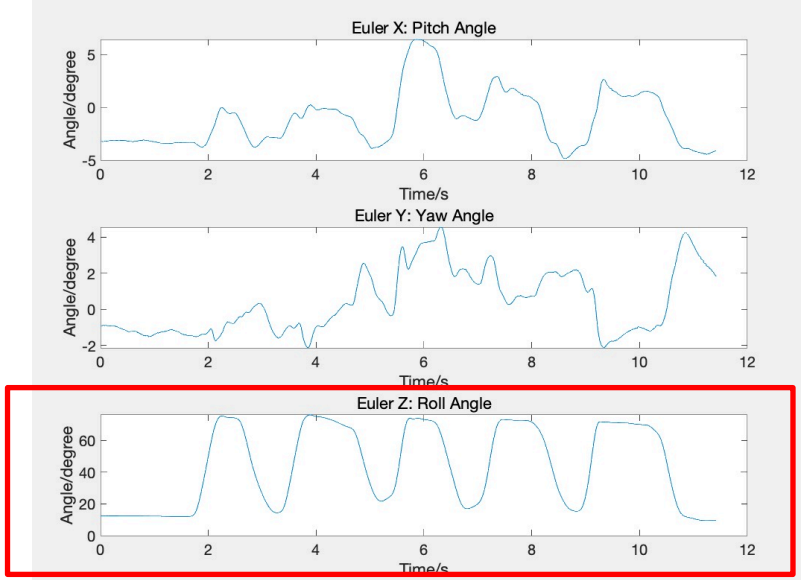
# Calibration Method – Linear regression

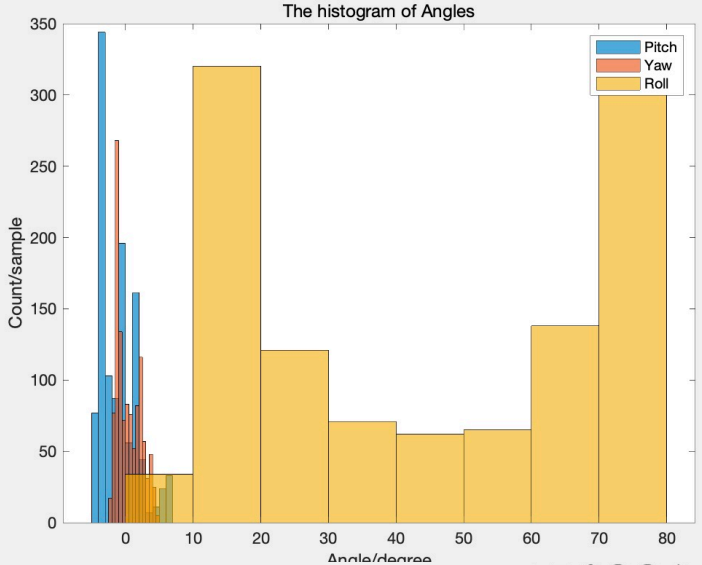
- Do linear regression for both IMU A6 and 1A with EM tracker using samples data



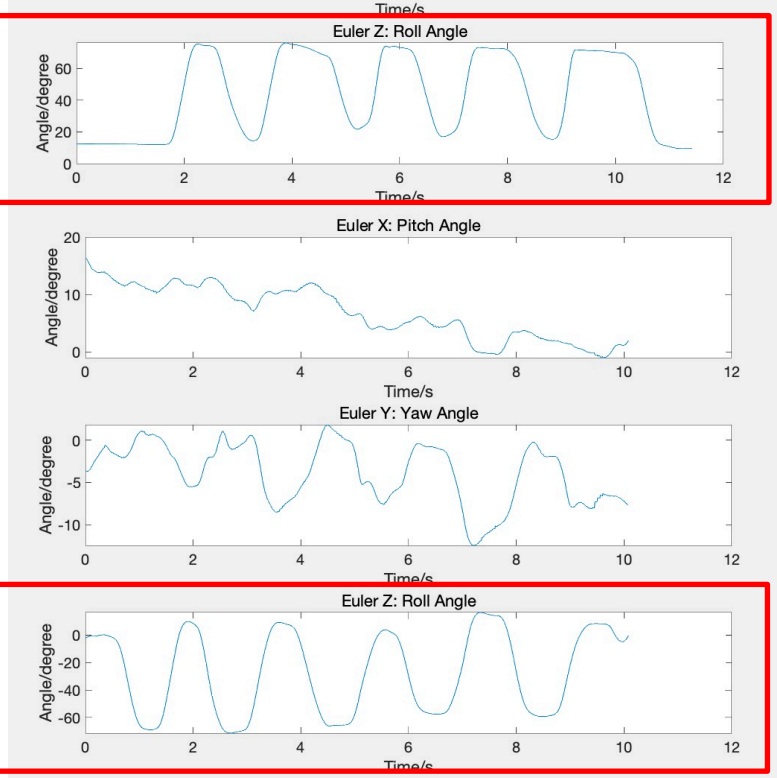
# Mock OR Data Analysis – rotate to left & right

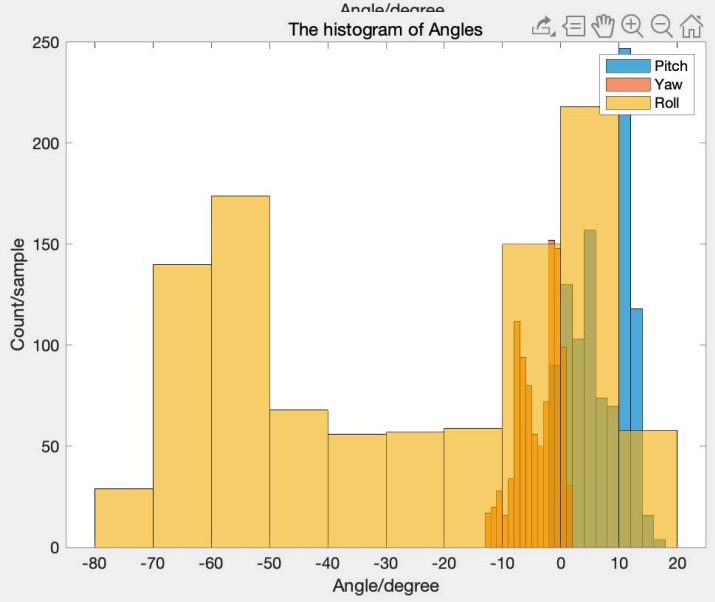


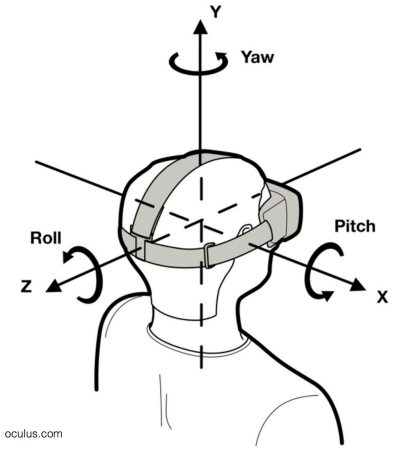

← Rotate to left

- Roll angle changes between 0 degree to 80 degree periodically.



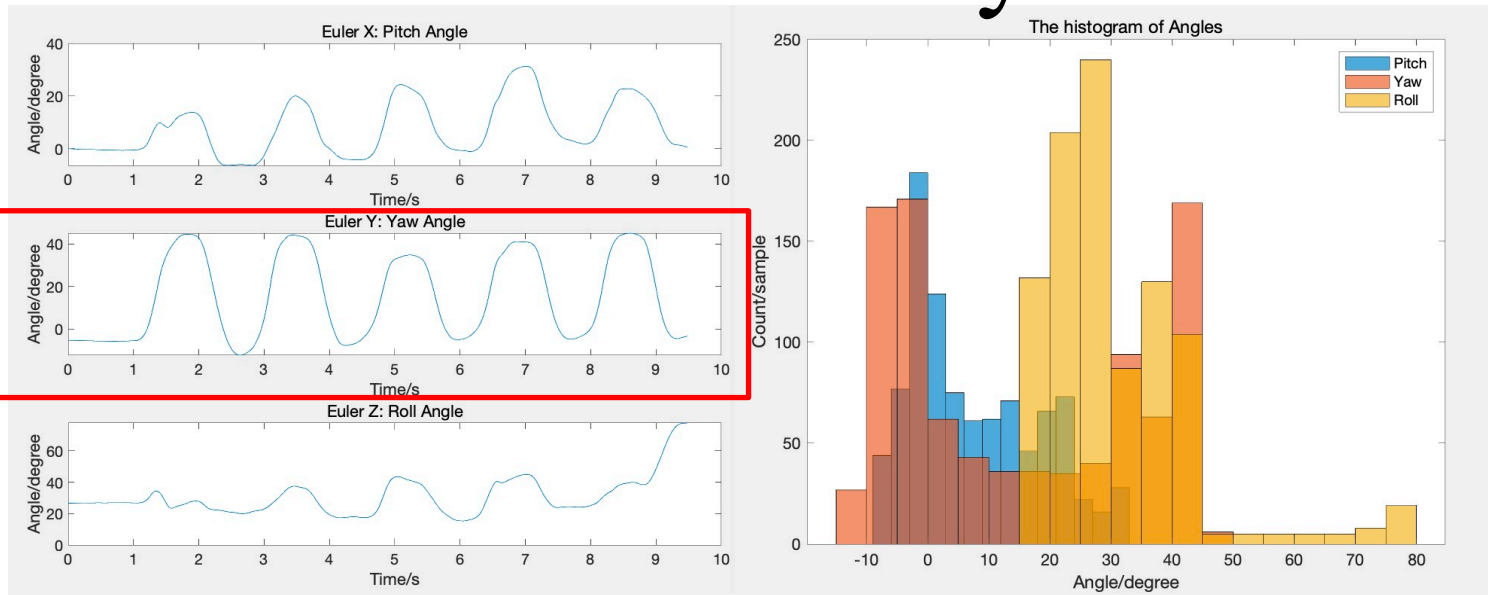

← Rotate to right




- Roll angle changes between -80 degree to 20 degree periodically.
- Pitch angle and Yaw angle change little and there is no significant difference between left and right circumstances.

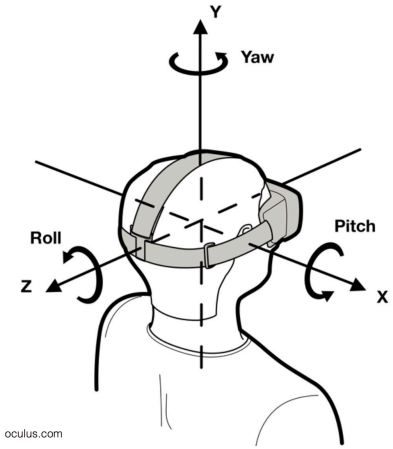
Coordinate system figure from: https://stanford.edu/class/ee267/lectures/lecture10.pdf

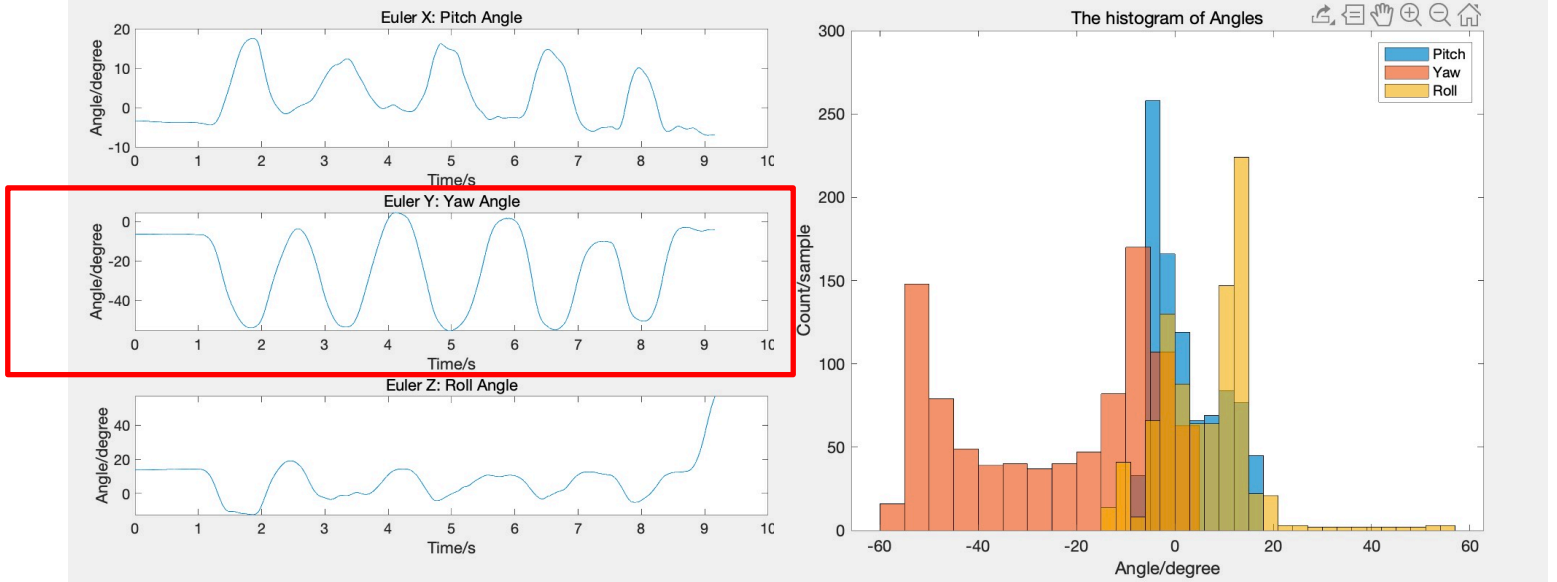
# Mock OR Data Analysis – turn to left & right




Turn to left

- Yaw angle changes between -10 degree to 45 degree periodically.



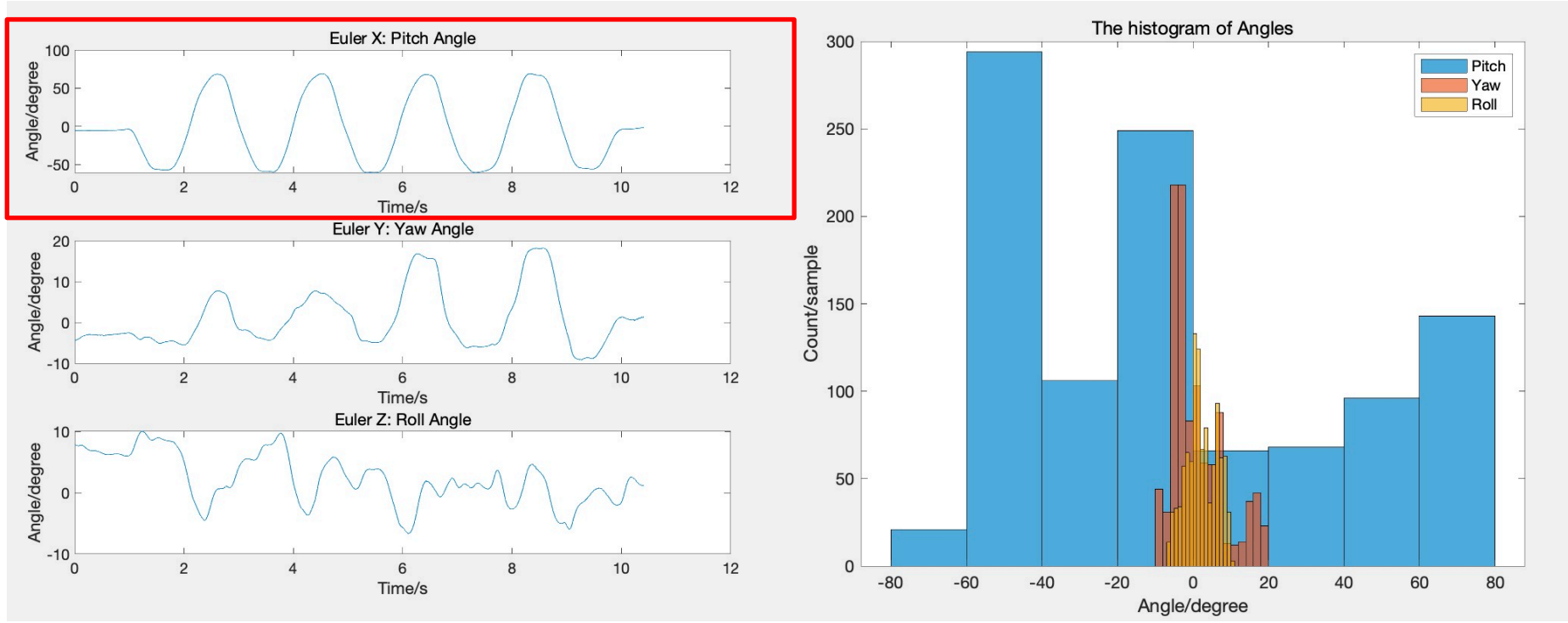

Turn to right

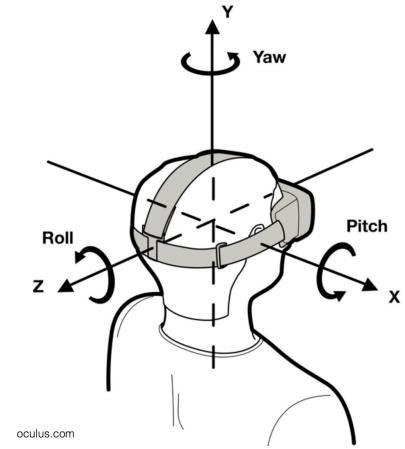
- Yaw angle changes between -60 degree to 5 degree periodically.
- Pitch angle and Roll angle change little and there is no significant difference between left and right circumstances.

Coordinate system figure from:
https://stanford.edu/class/ee267/lectures/lecture10.pdf

# Mock OR Data Analysis – turn up and down

- Pitch angle changes between -80 degree to 80 degree strongly and periodically.
- Yaw angle and Roll angle changes little.

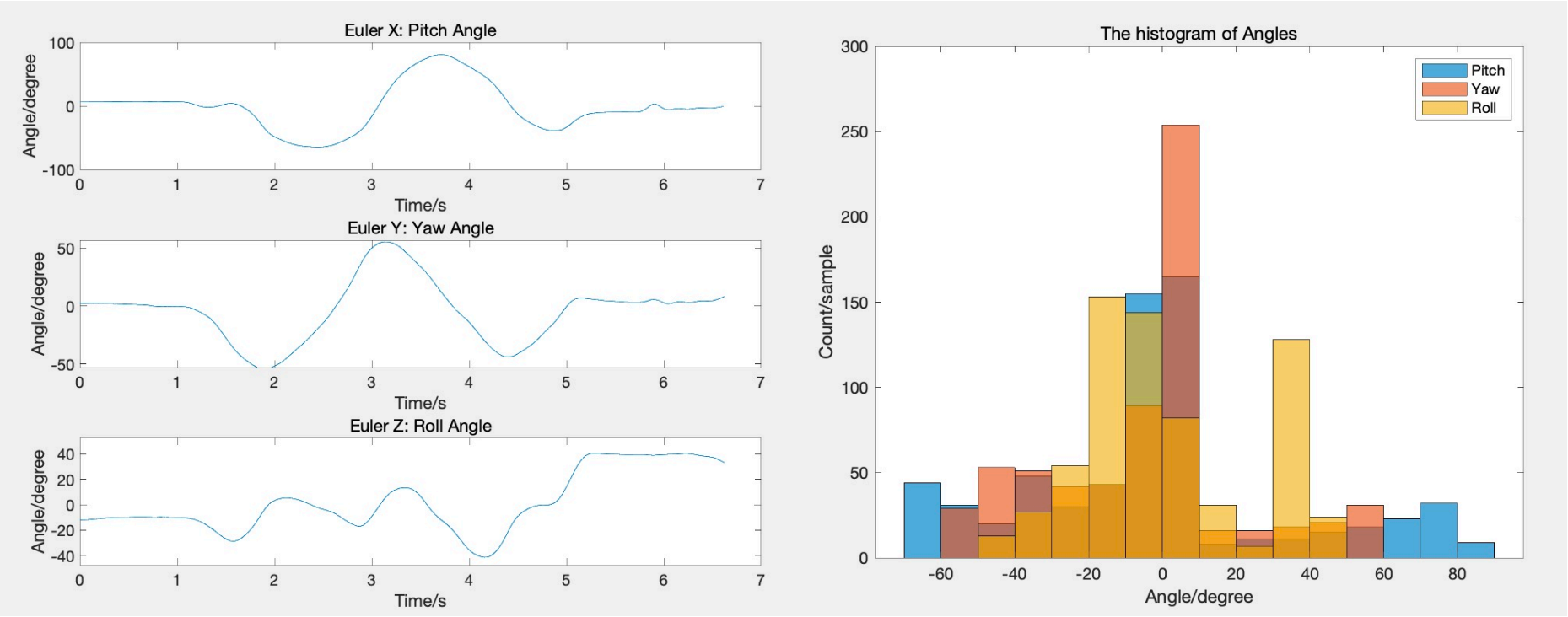


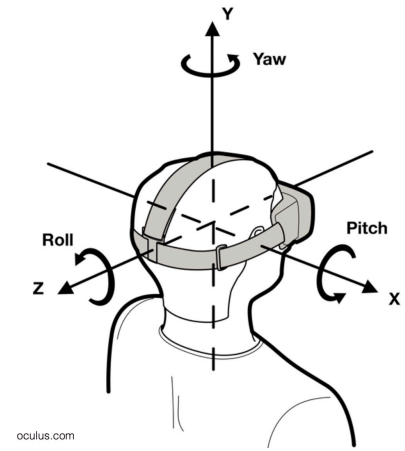




Coordinate system figure from:
https://stanford.edu/class/ee267/lectures/lecture10.pdf

# Mock OR Data Analysis – rotate circle

- Pitch angle and Yaw angle change in a circle.
- Roll angle changes randomly.

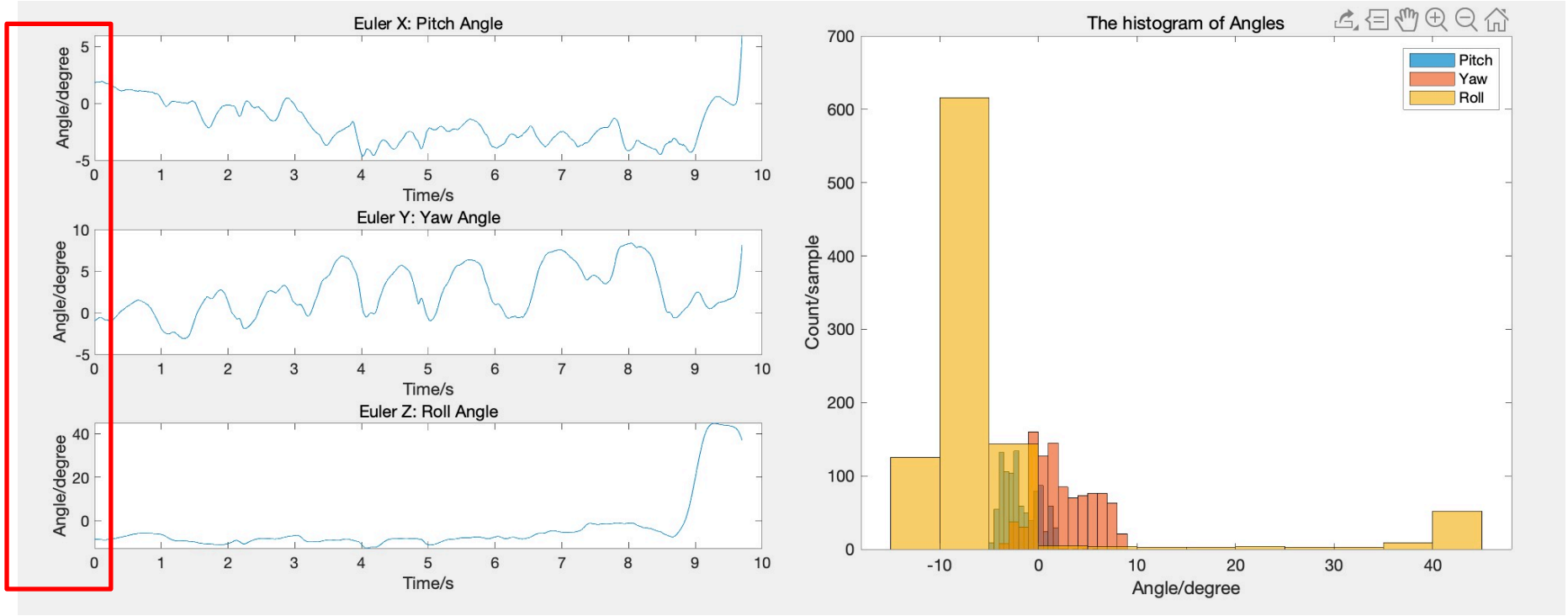


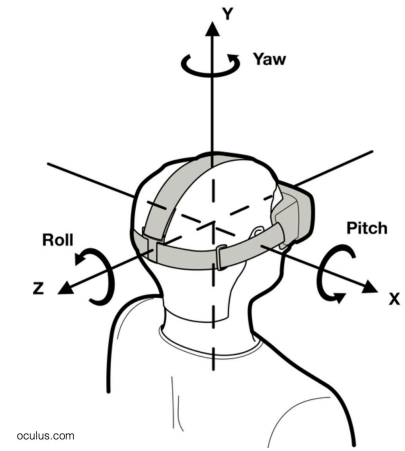




Coordinate system figure from:
https://stanford.edu/class/ee267/lectures/lecture10.pdf

# Mock OR Data Analysis – move shoulder

- Pitch angle , Yaw angle, and Roll angle change little (almost zero degree).

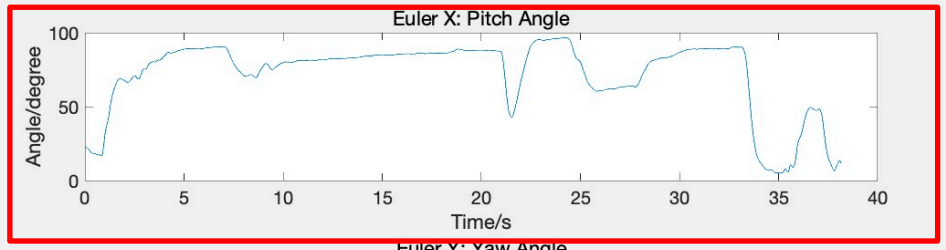


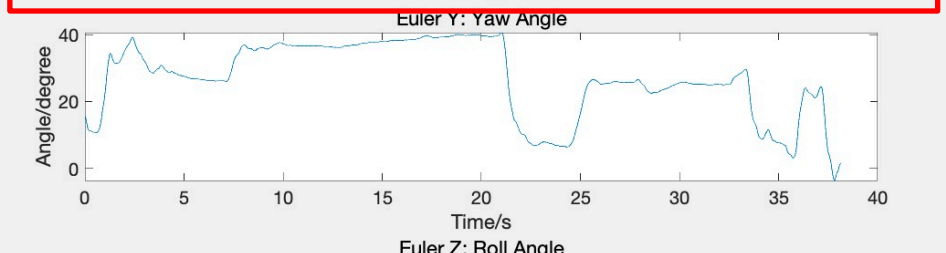



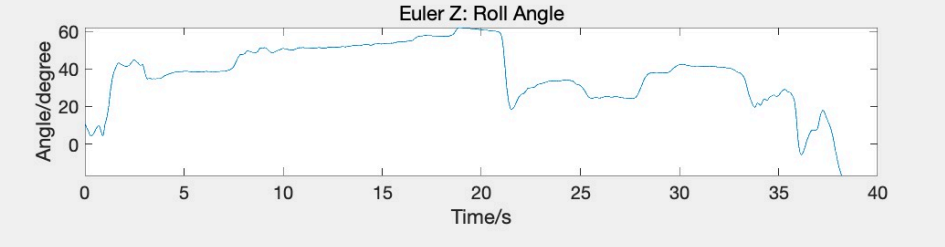

Coordinate system figure from:
https://stanford.edu/class/ee267/lectures/lecture10.pdf

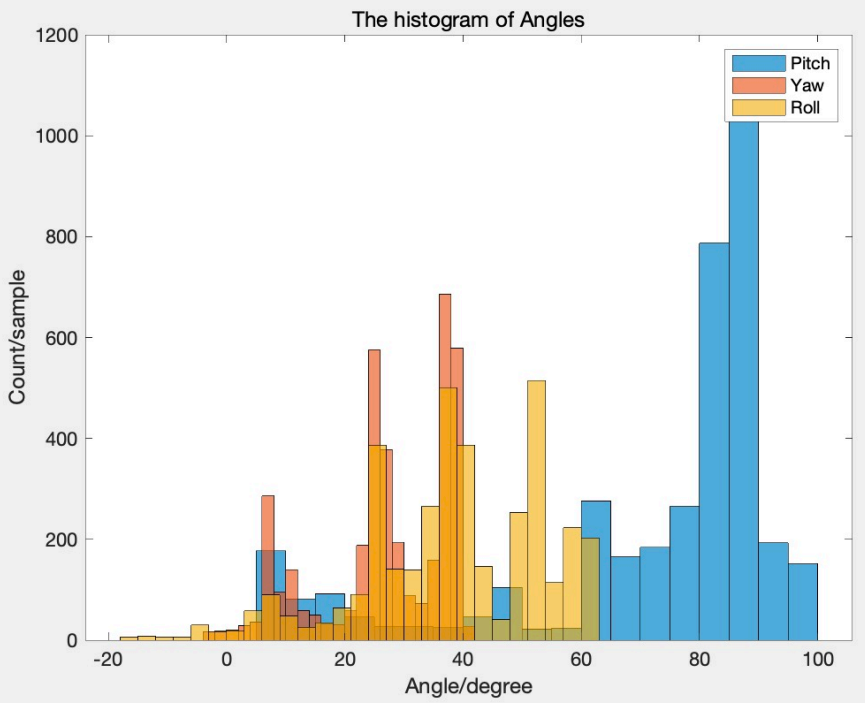
# Mock OR Data Analysis – traditional case

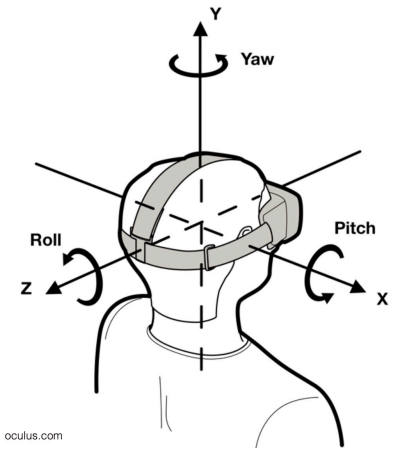
- Pitch angle keeps at 85 to 90 degree for a long time;
- Yaw angle and Roll angle change between 0 to 60 degree, but they are not we concern about.



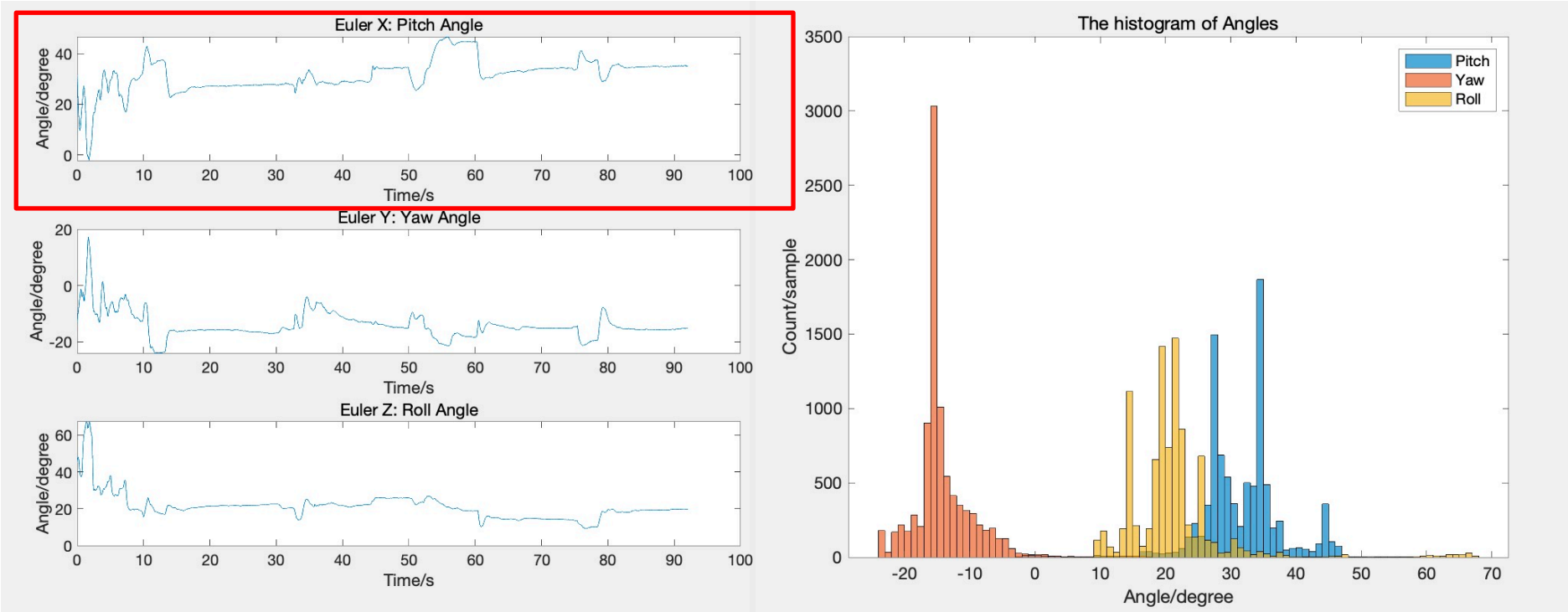



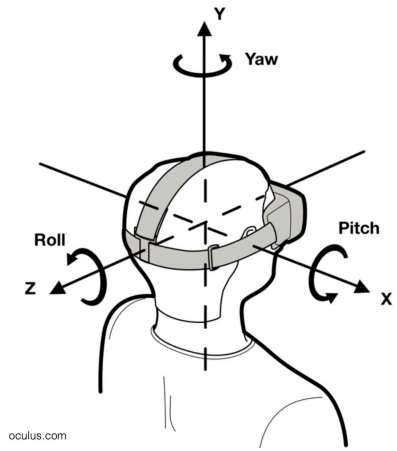




Coordinate system figure from:
https://stanford.edu/class/ee267/lectures/lecture10.pdf

# Mock OR Data Analysis – endoscopic case

- Pitch angle keeps at 25 to 35 degree for a long time;
- Yaw angle changes between -20 to 0 degree, and Roll angle changes between 10 to 30 degree, but they are not we concern about.




Coordinate system figure from:
https://stanford.edu/class/ee267/lectures/lecture10.pdf