

**F-16 Capstone**  
**Sensor Noise Analysis**  
**4/25/2021**

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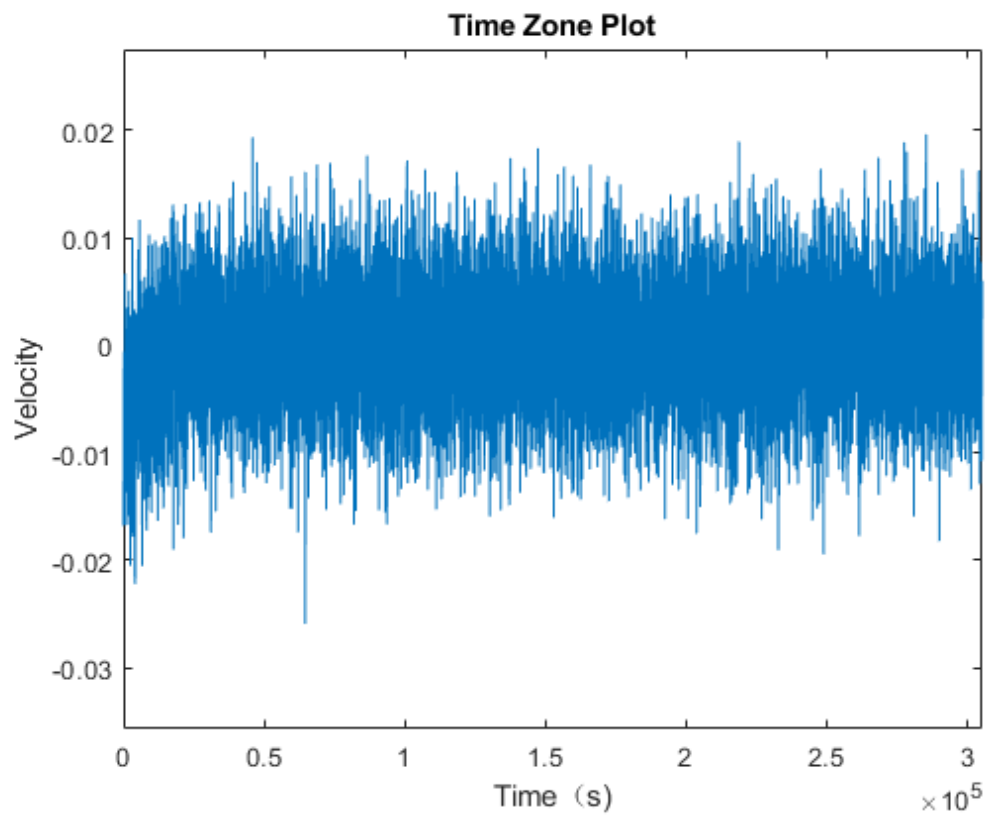
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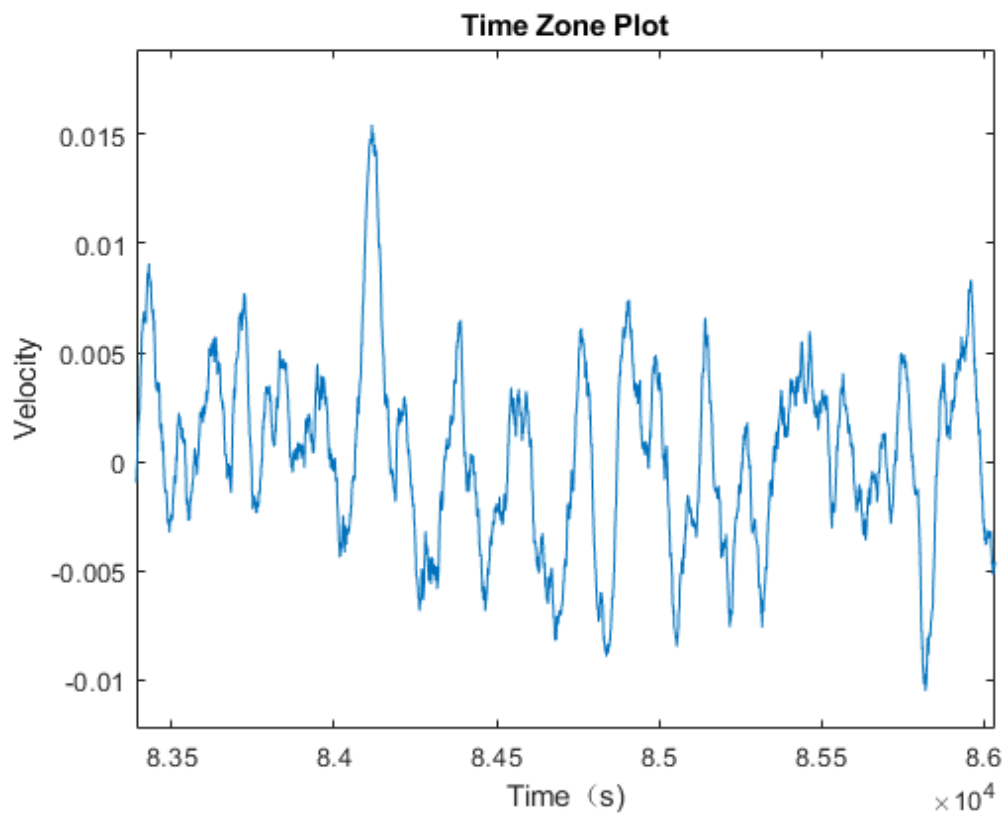
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## 1. IMU in PX4

### 1.1 Velocity (PX4)

#### a. Time Zone Plot

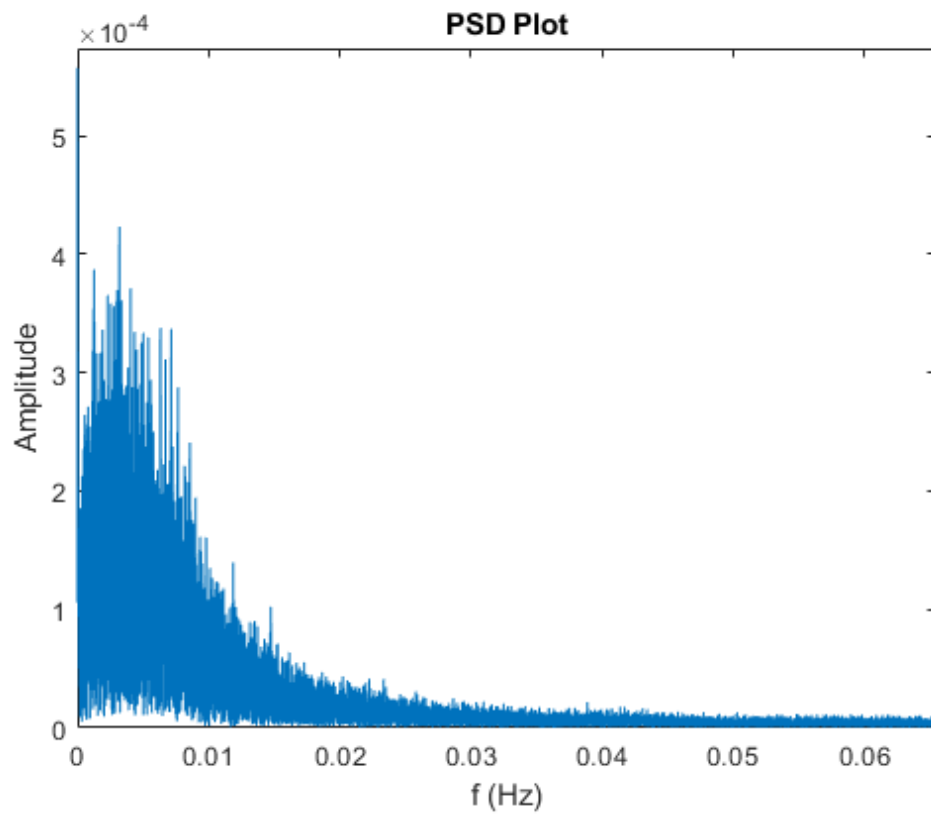
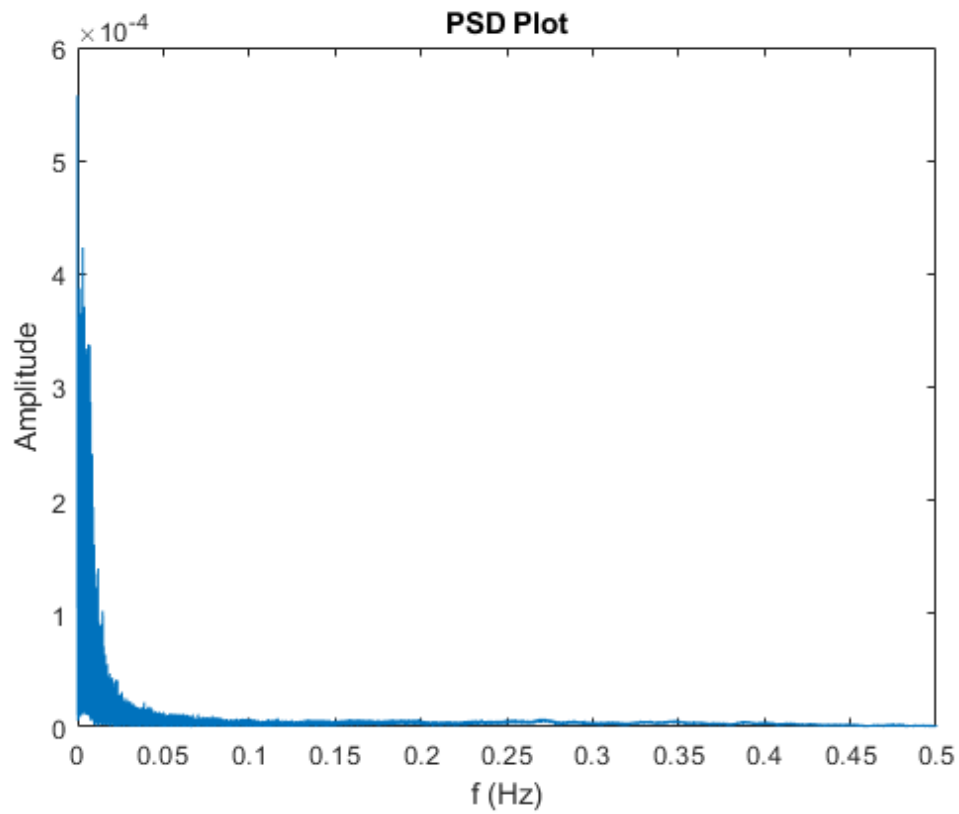




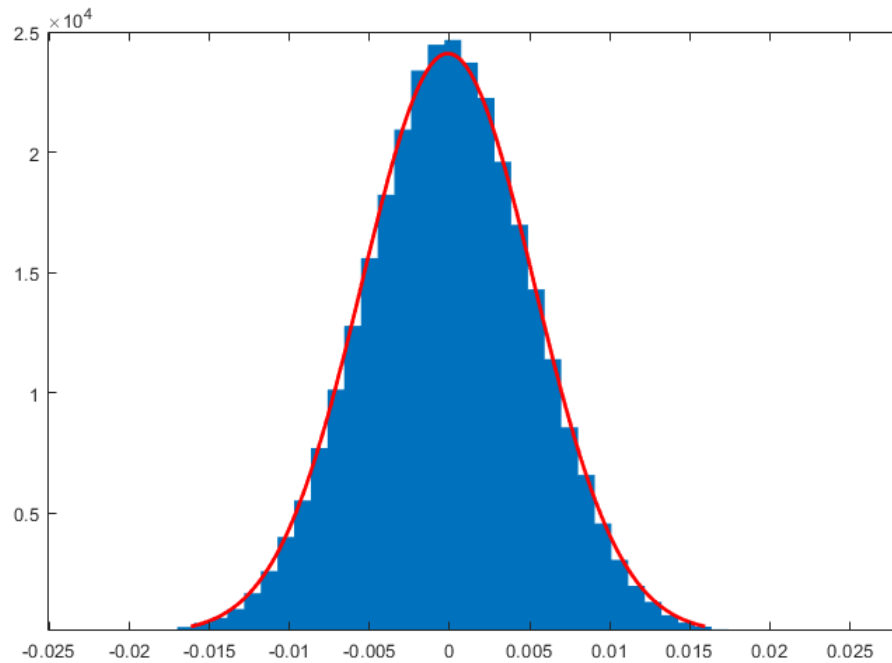
b. Mean Value and Standard Deviation

	Value
Mean Value	$-1.06 \times 10^{-4}$
Standard Deviation	0.0054

## c. Power Spectral Density Plot

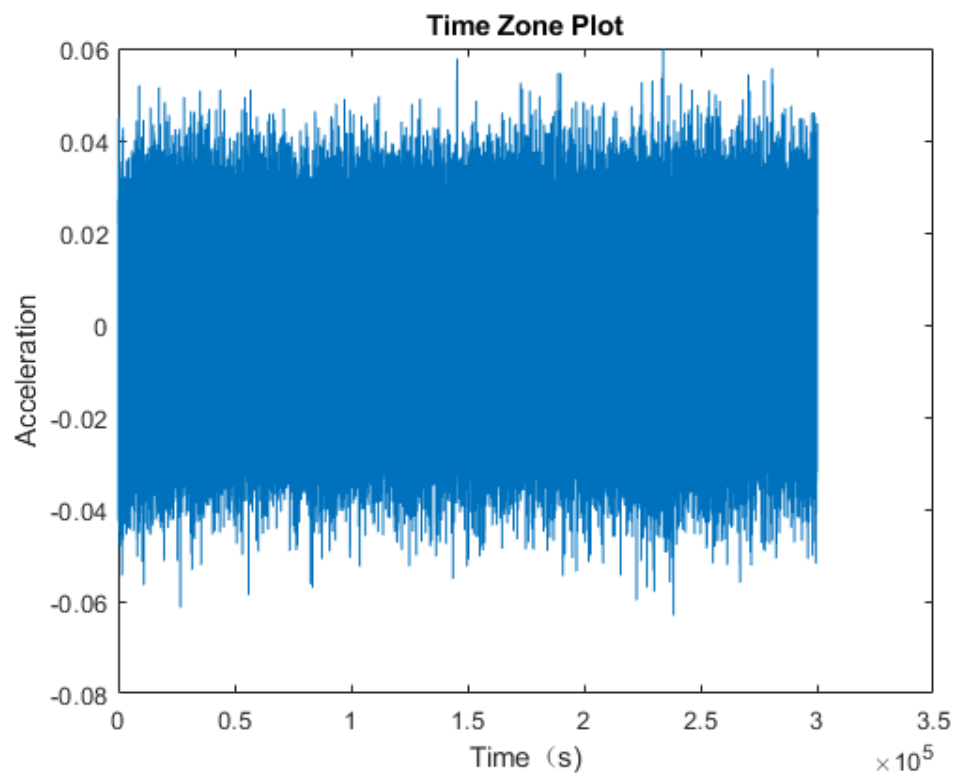


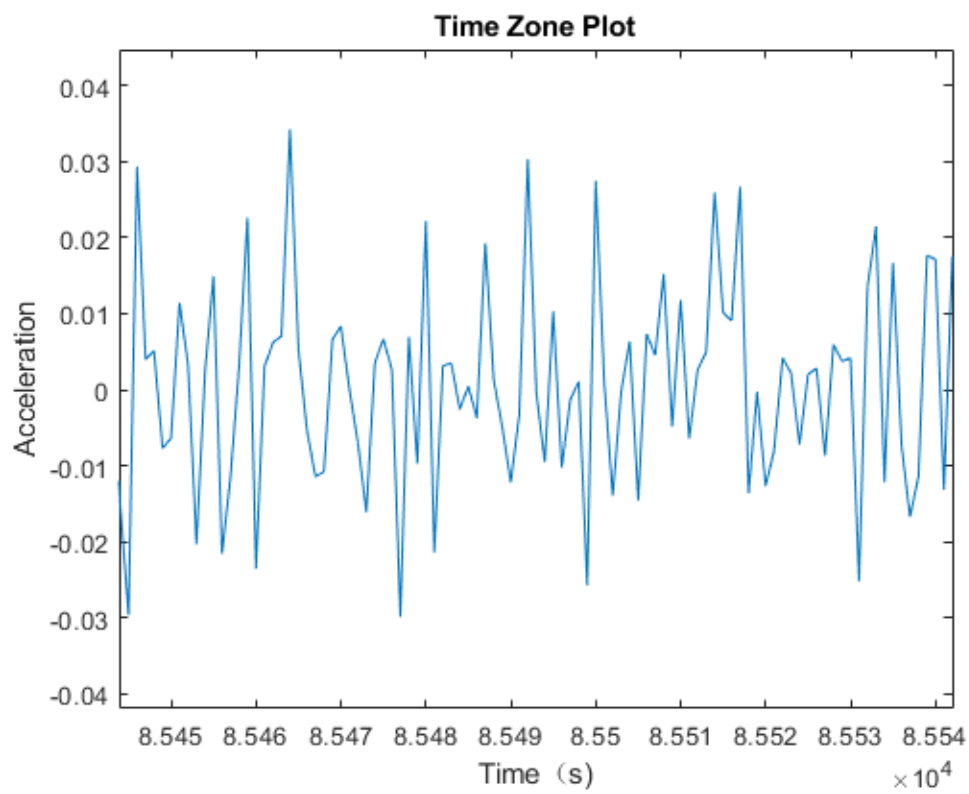
## d. Distribution Histogram



## 1.2 Acceleration (PX4)

## a. Time Zone Plot



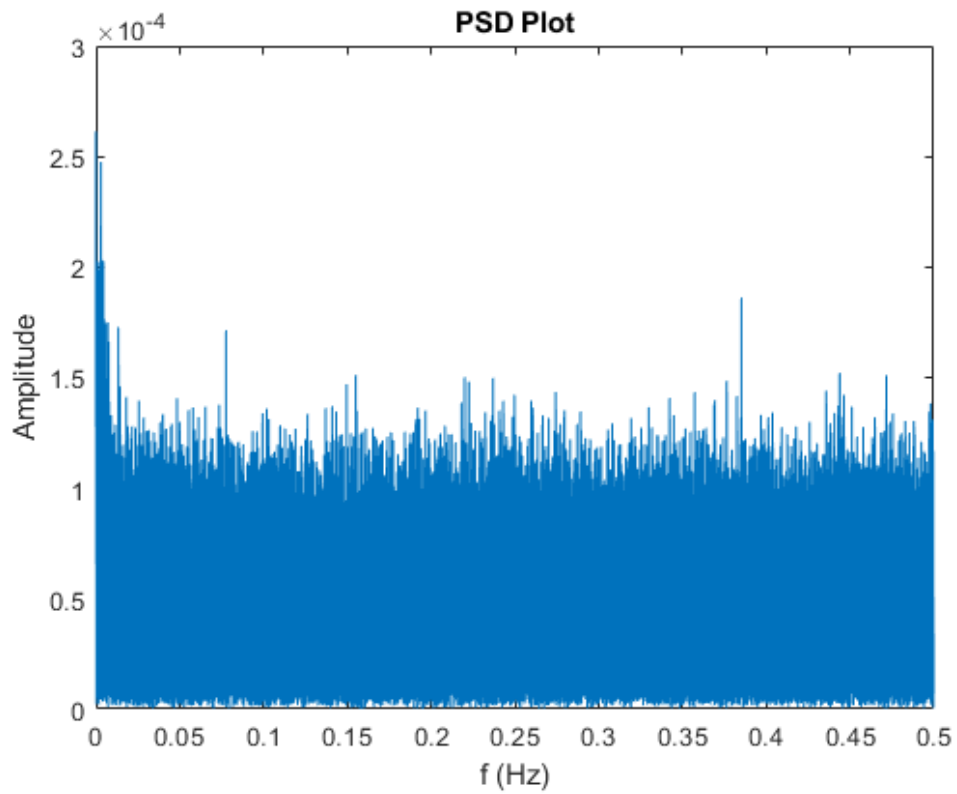


b. Mean Value and Standard Deviation

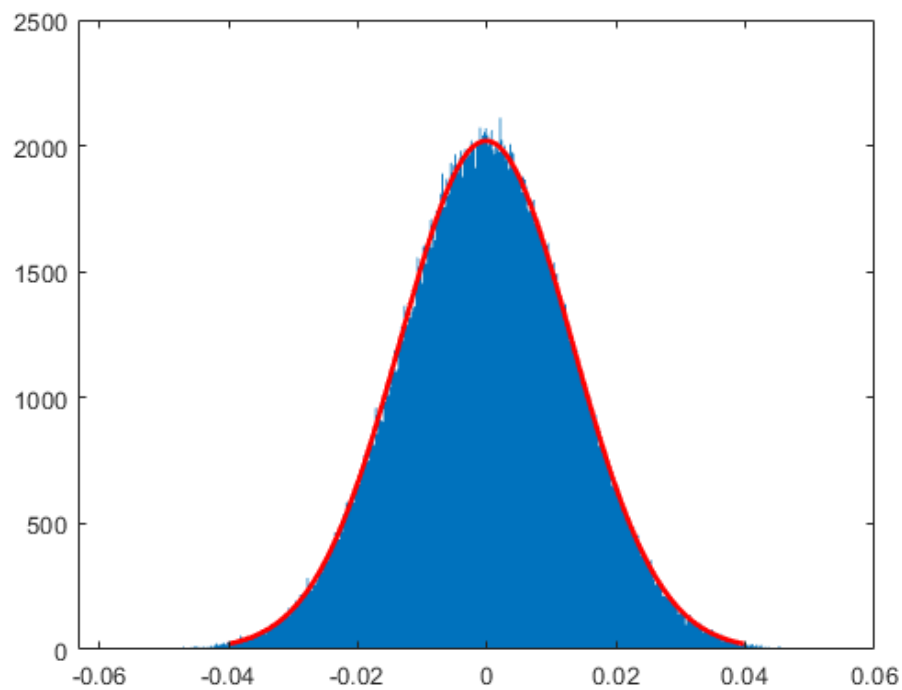
	Value
Mean Value	$-1.28 \times 10^{-4}$
Standard Deviation	0.0133



## c. Power Spectral Density Plot

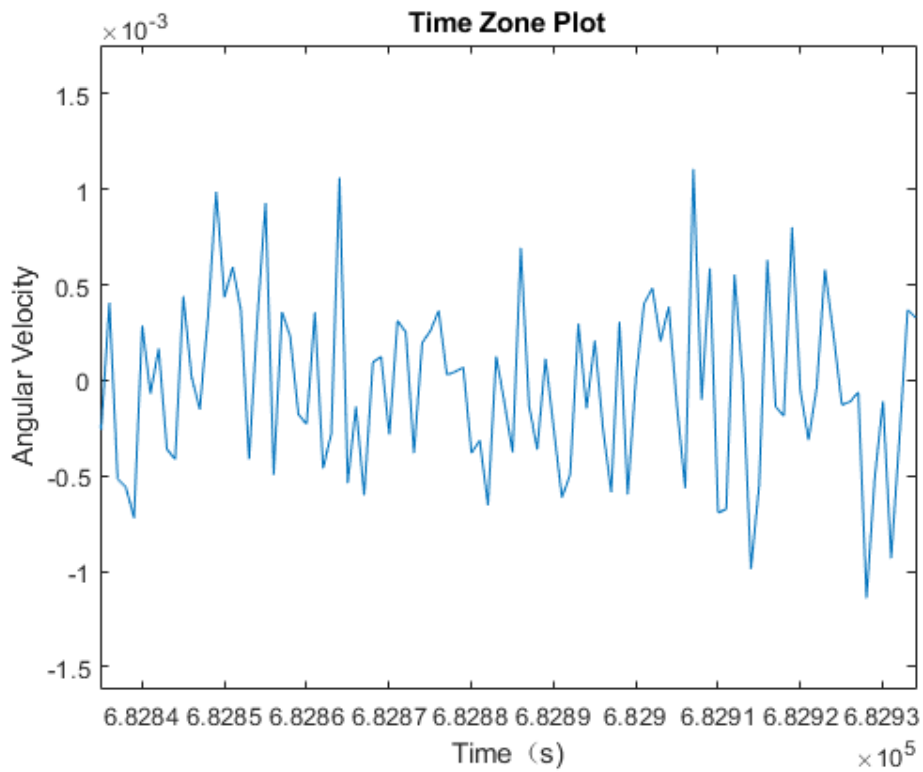
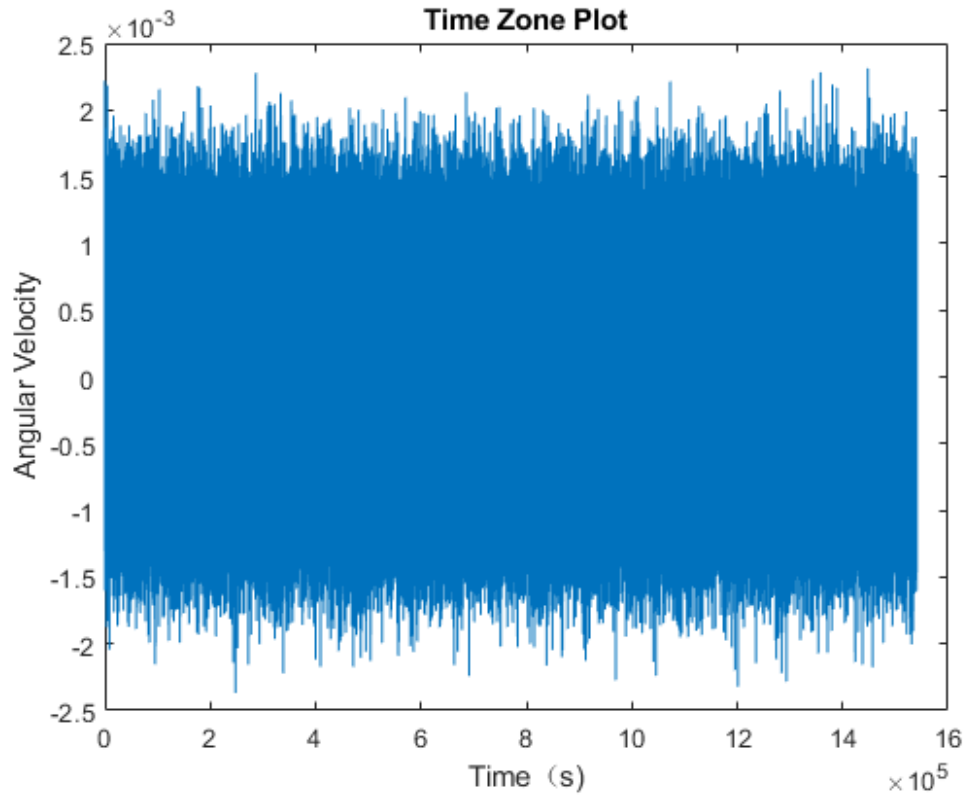


## d. Distribution Histogram



### 1.3 Angular Velocity (PX4)

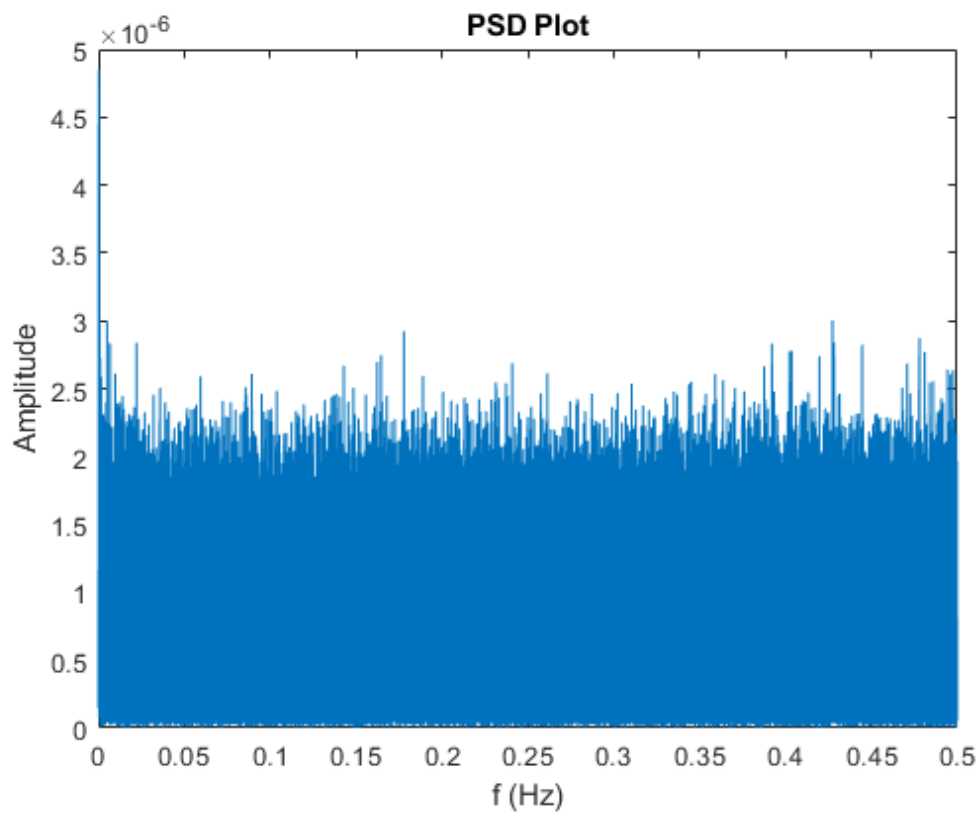
#### a. Time Zone Plot



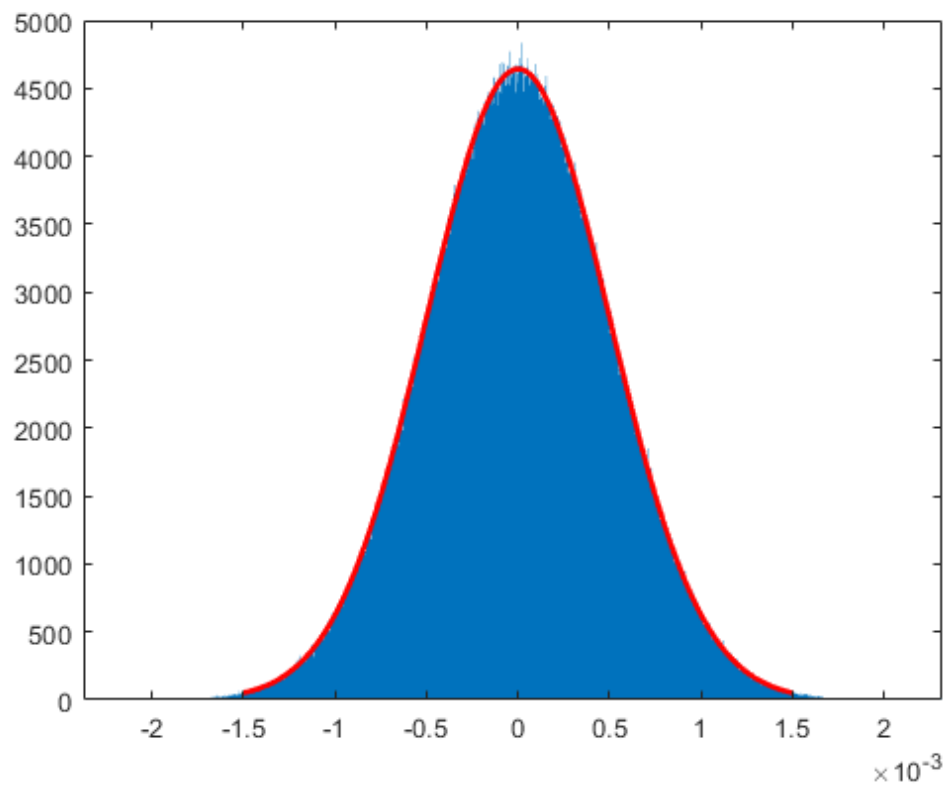
## b. Mean Value and Standard Deviation

	Value
Mean Value	$-5.59 \times 10^{-7}$
Standard Deviation	$4.99 \times 10^{-4}$

## c. Power Spectral Density Plot



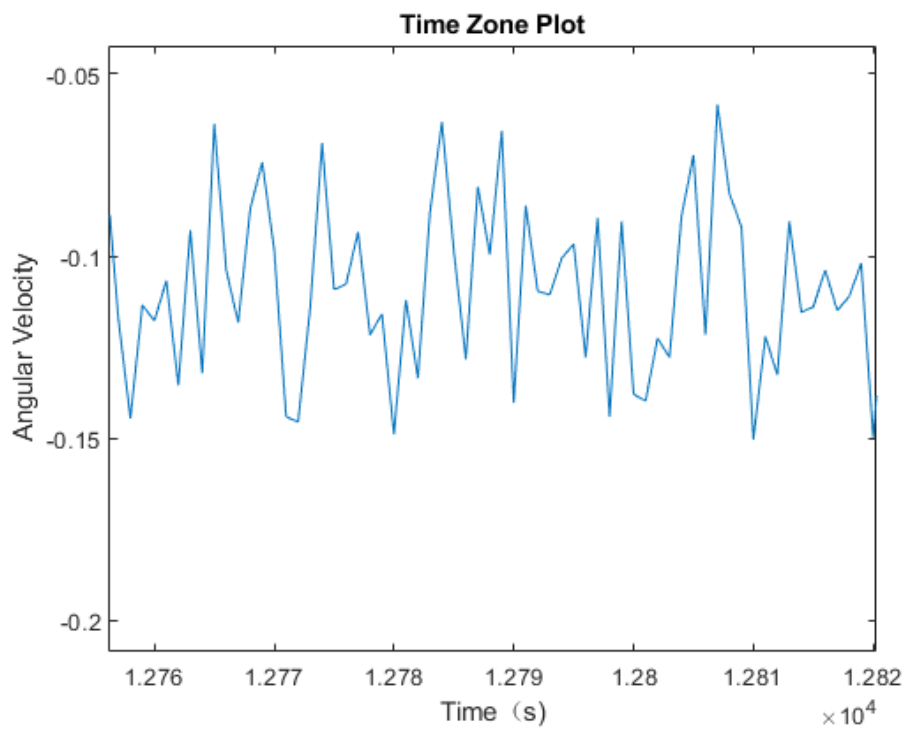
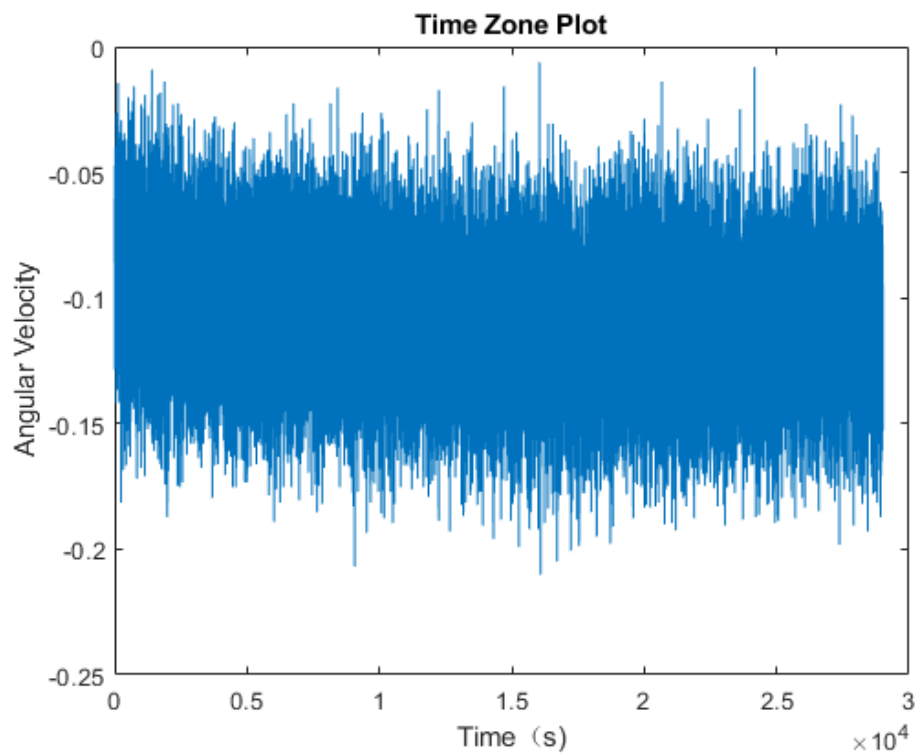
## d. Distribution Histogram



## 2. IMU Sensor

### 2.1 Acceleration (Sensor)

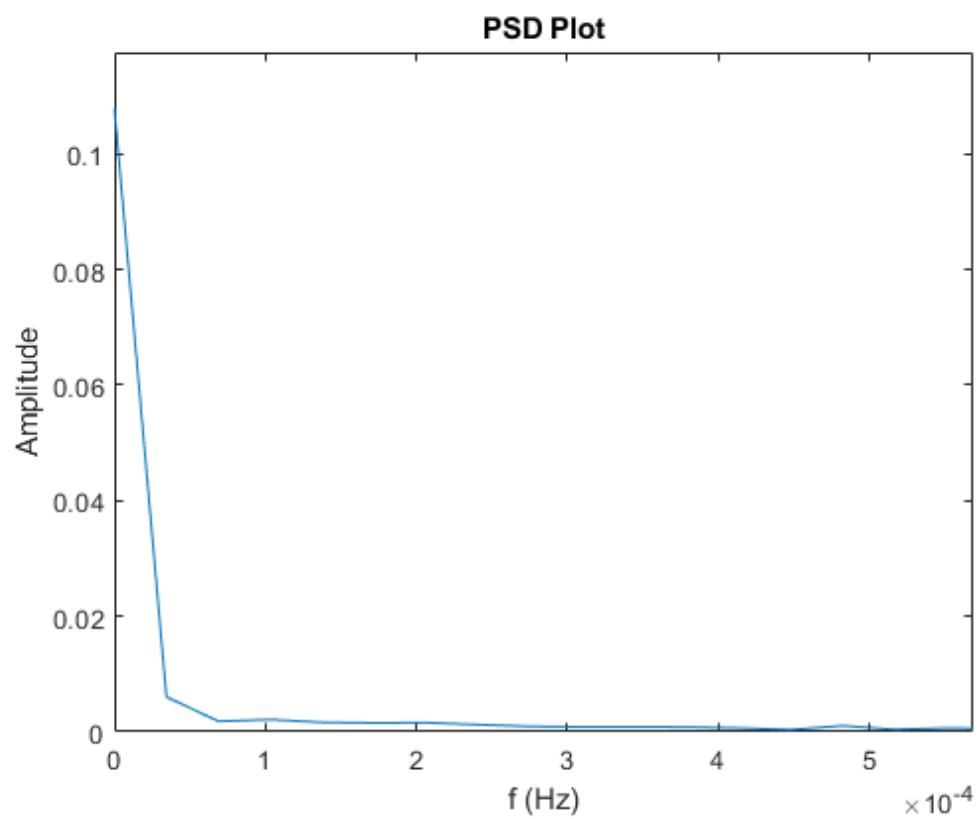
#### a. Time Zone Plot



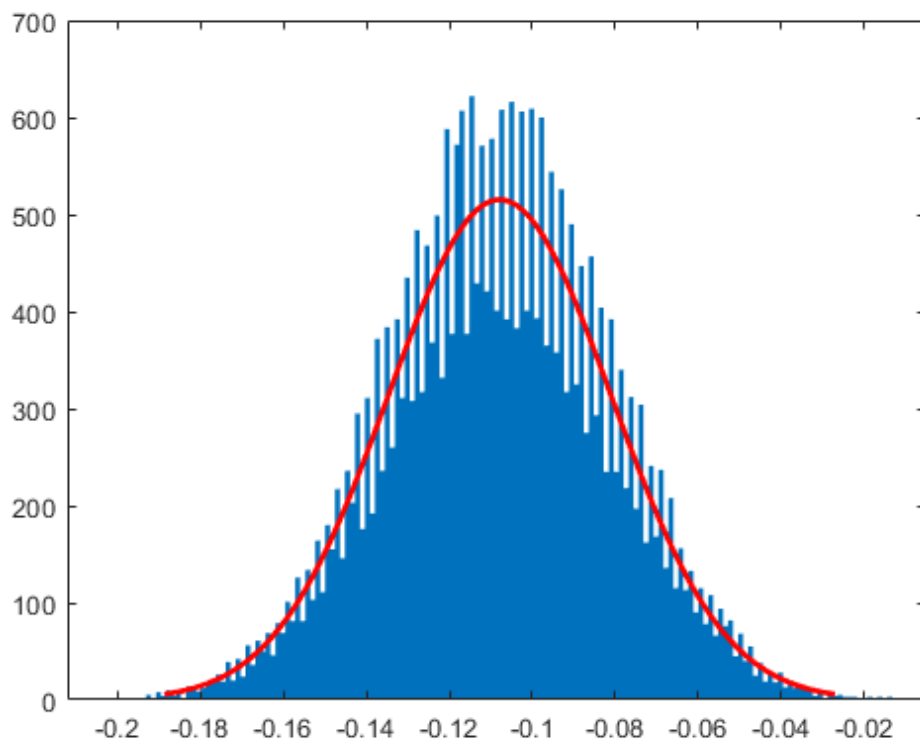
## b. Mean Value and Standard Deviation

	Value
Mean Value	-0.108
Standard Deviation	0.0269

## c. Power Spectral Density Plot

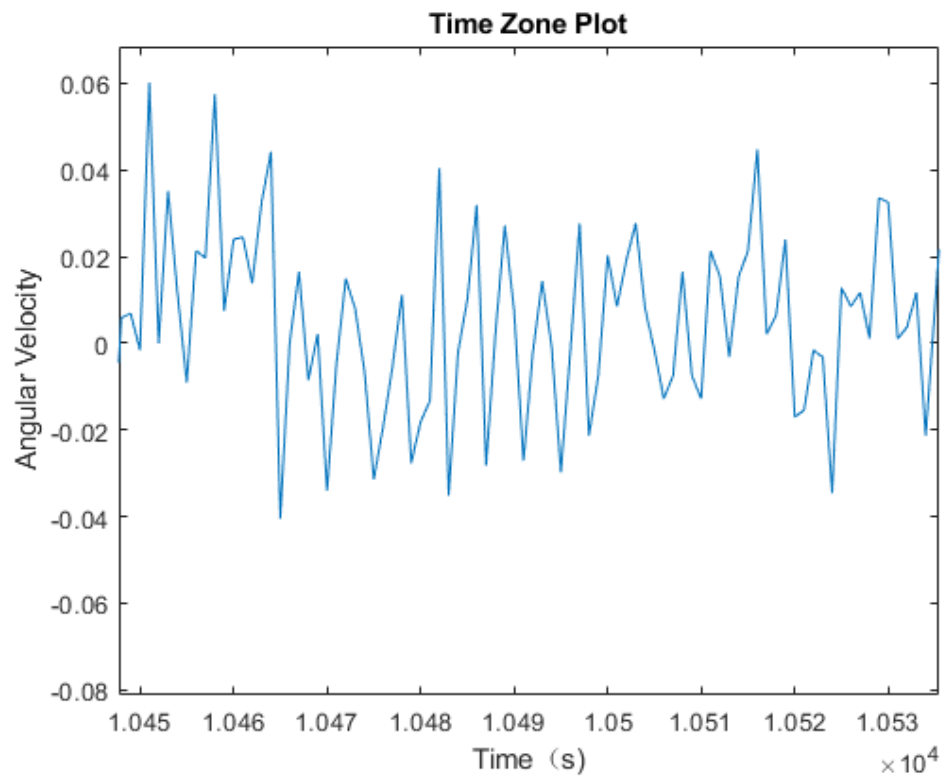
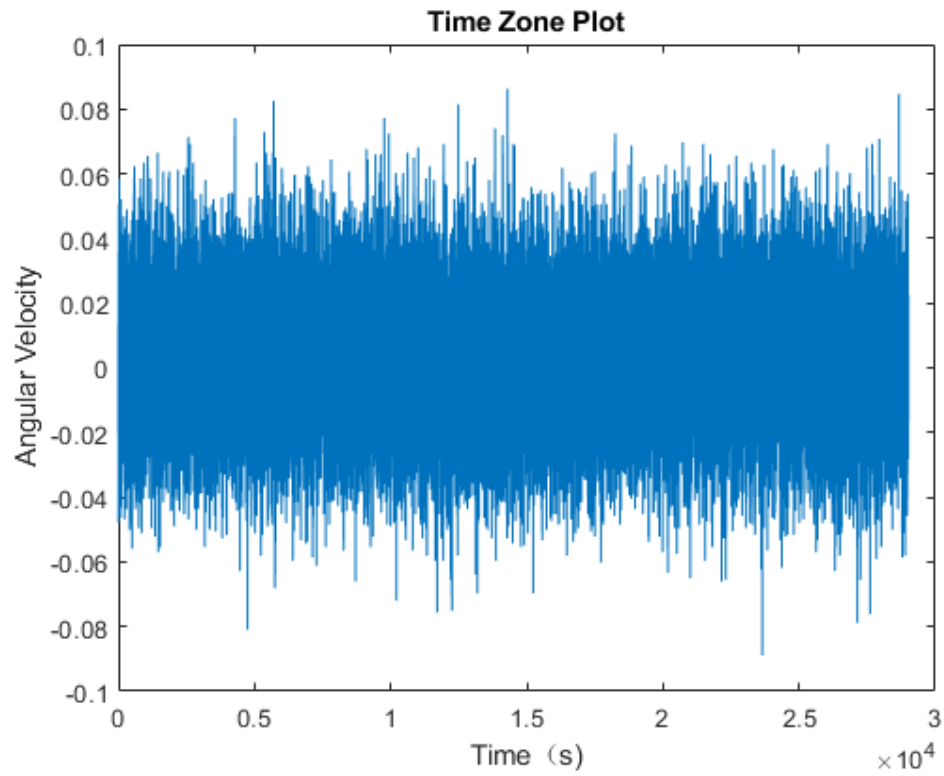


## d. Distribution Histogram



## 2.2 Angular Velocity (Sensor)

### a. Time Zone Plot

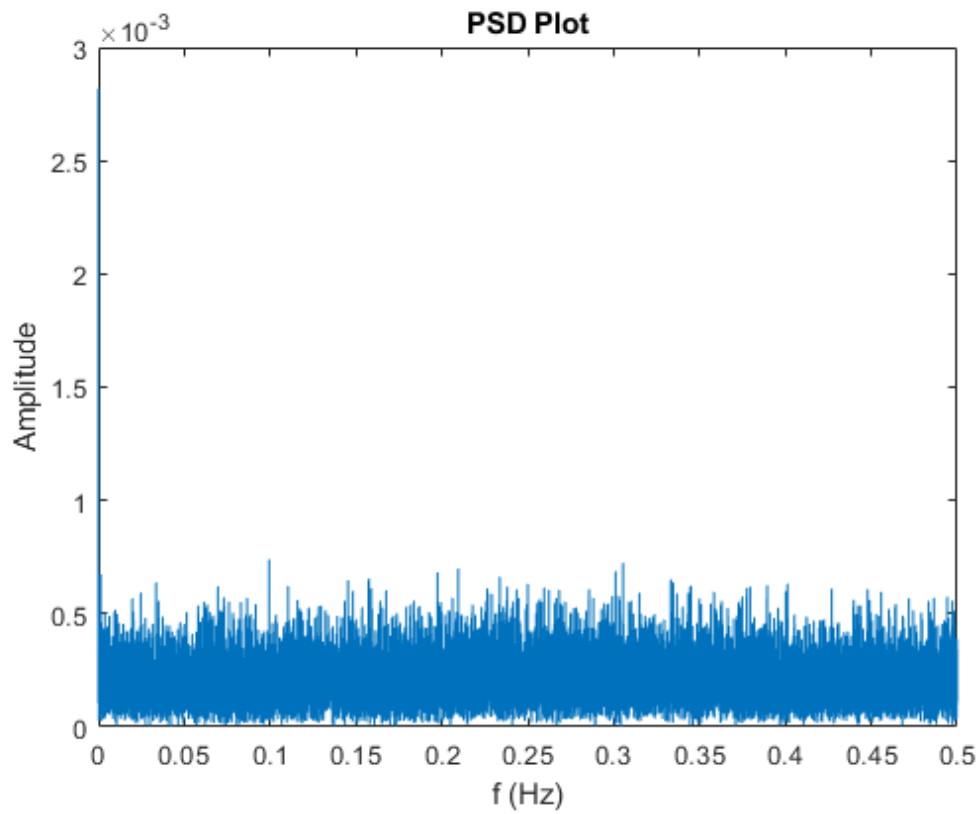




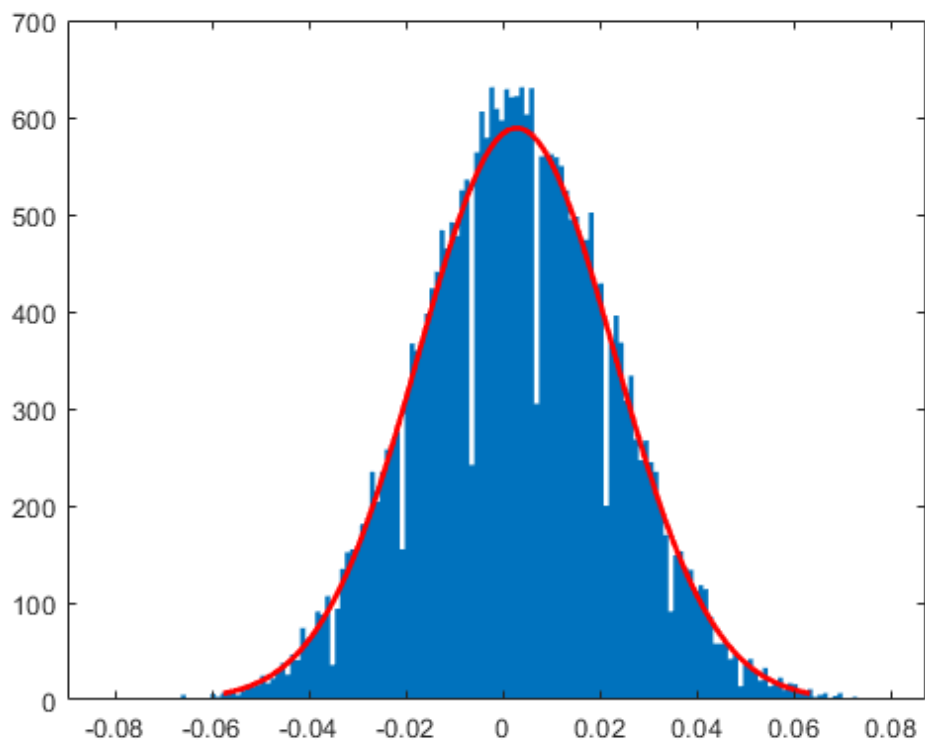
## b. Mean Value and Standard Deviation

	Value
Mean Value	0.0028
Standard Deviation	0.0202

## c. Power Spectral Density Plot

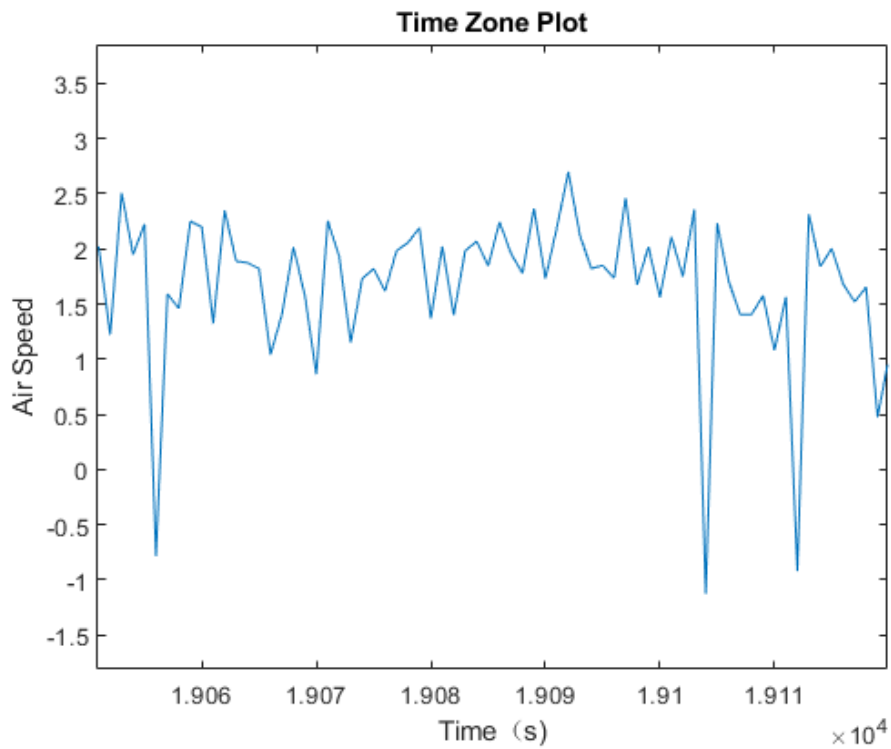
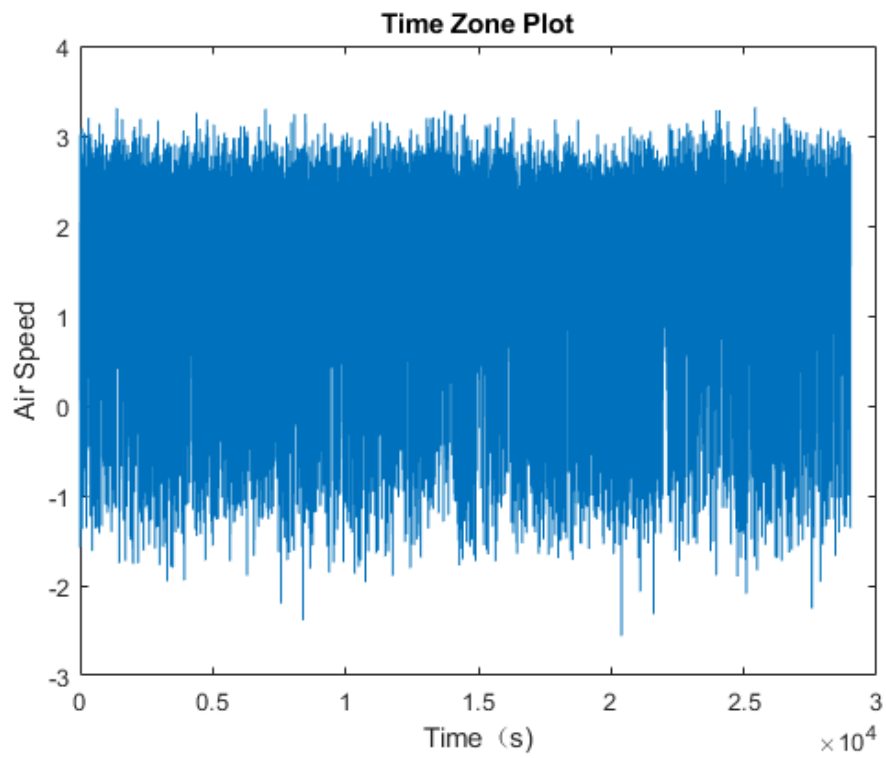


## d. Distribution Histogram



### 3. Airspeed

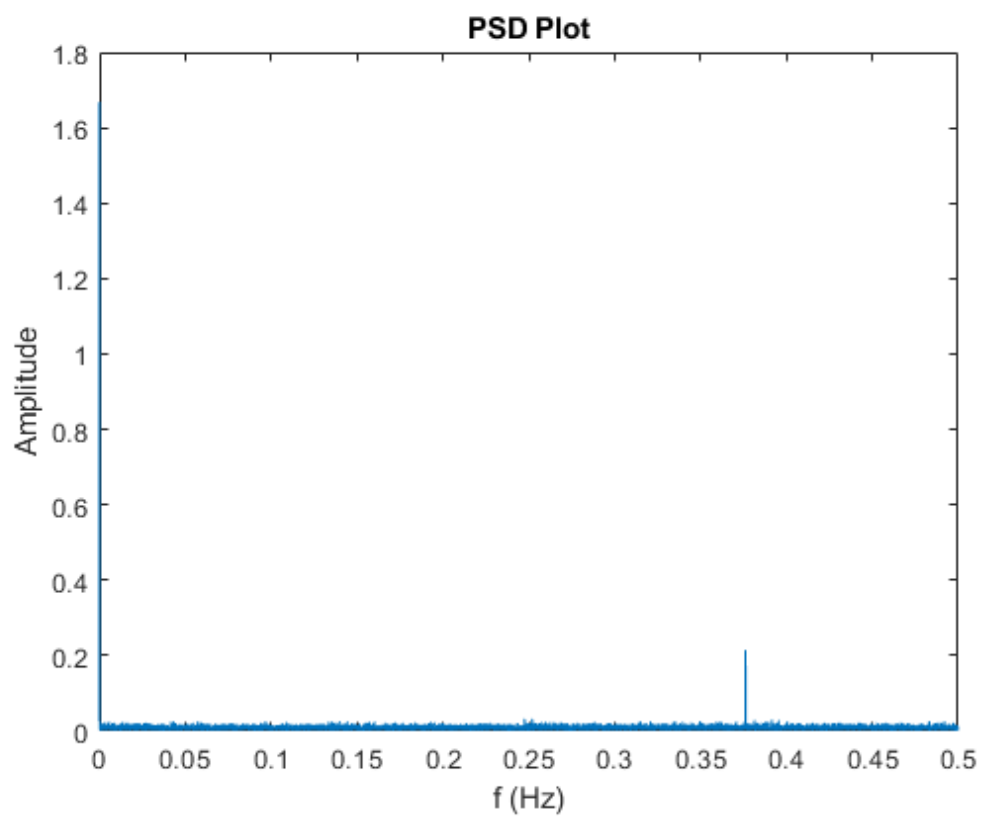
#### a. Time Zone Plot

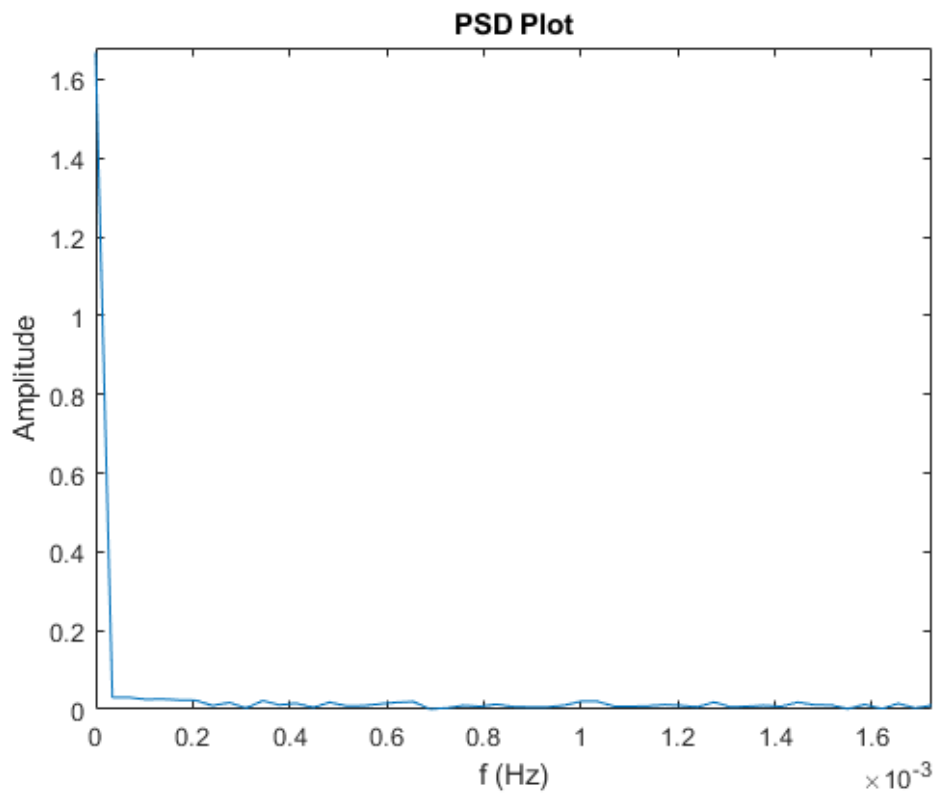


## b. Mean Value and Standard Deviation

	Value
Mean Value	1.668
Standard Deviation	0.812

## c. Power Spectral Density Plot





d. Distribution Histogram

