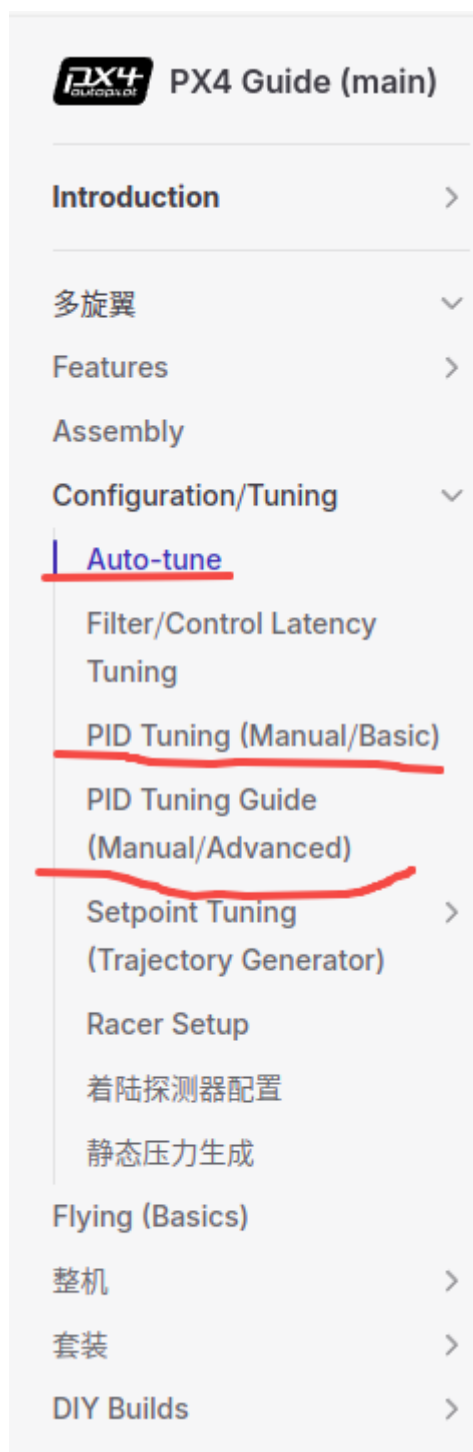


# 618飞机pid调节

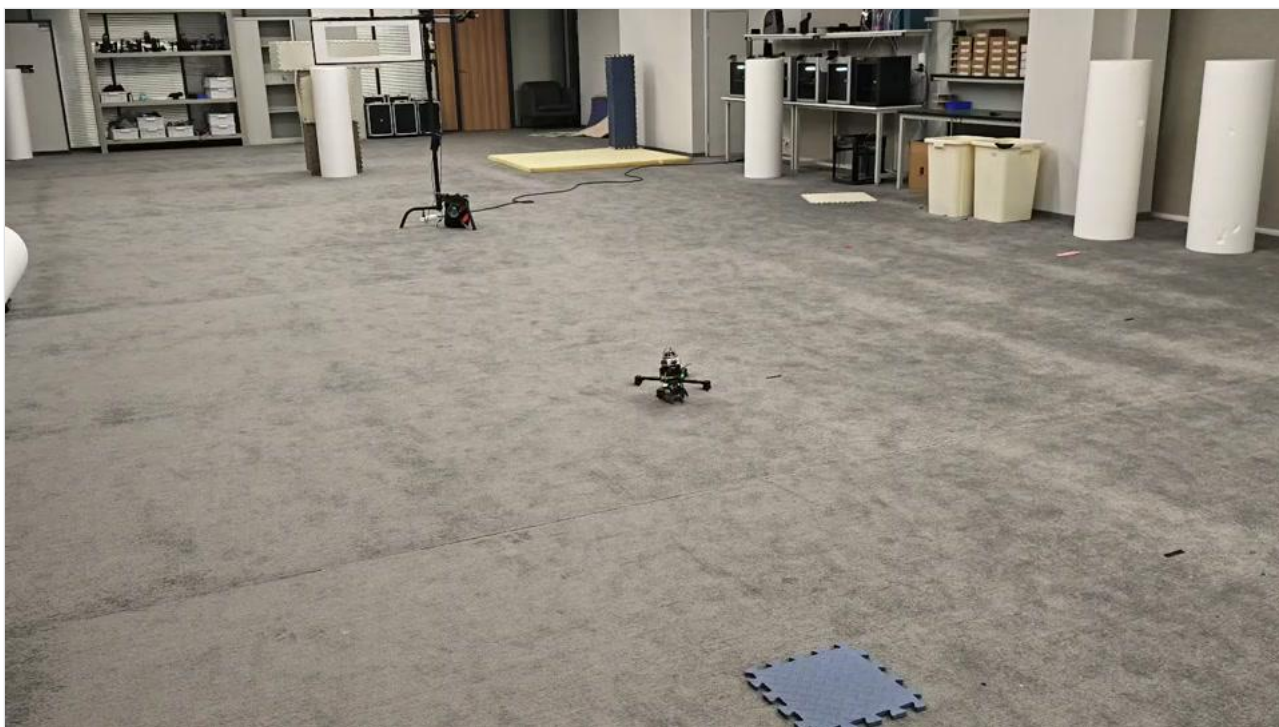


[https://docs.px4.io/main/zh/config/autotune\\_mc.html](https://docs.px4.io/main/zh/config/autotune_mc.html)

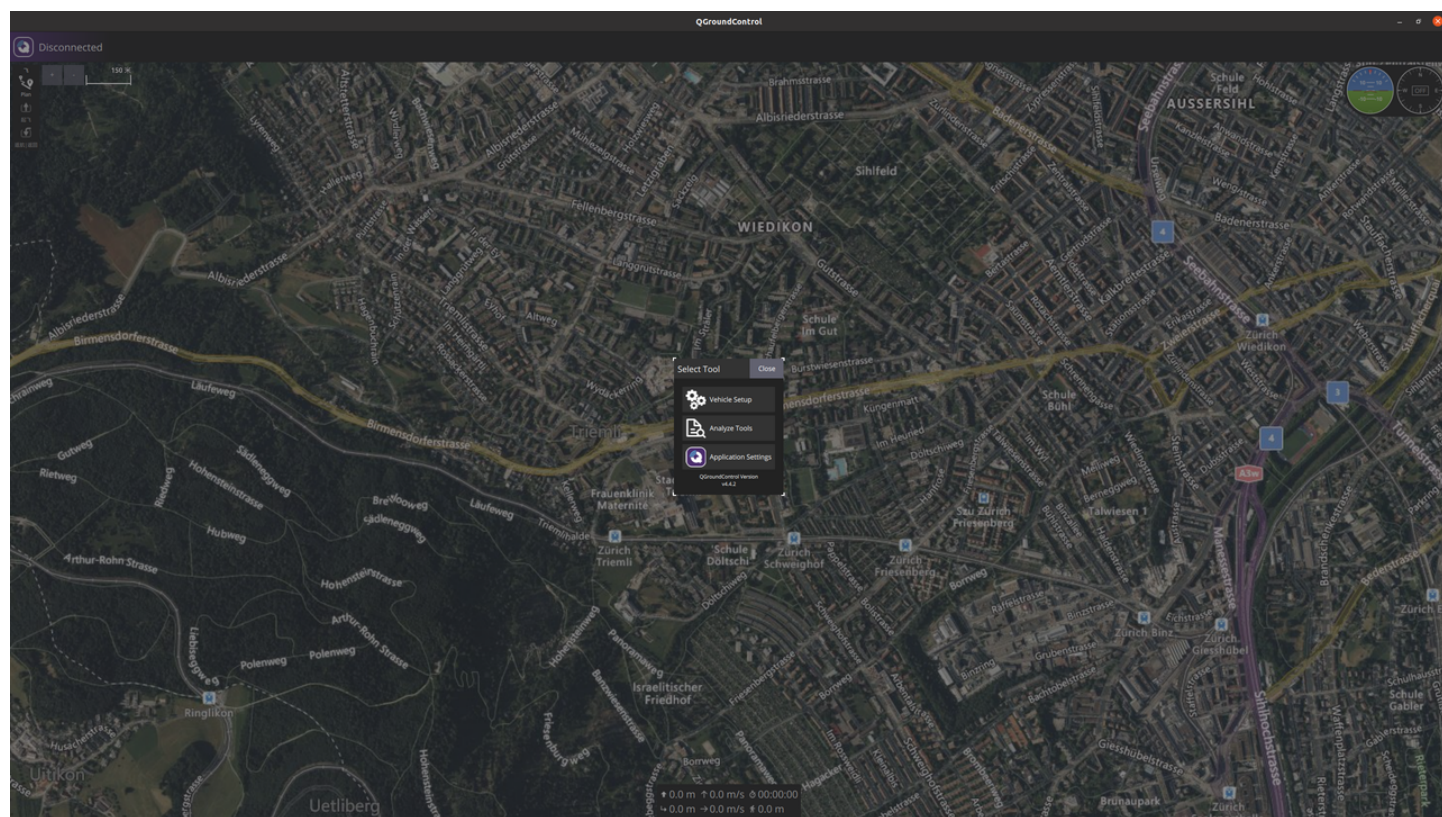
[https://docs.ncnynl.com/en/px4/zh/config\\_mc/pid\\_tuning\\_guide\\_multicopter.html](https://docs.ncnynl.com/en/px4/zh/config_mc/pid_tuning_guide_multicopter.html)

首先学习上述三个PX4官方文档内容

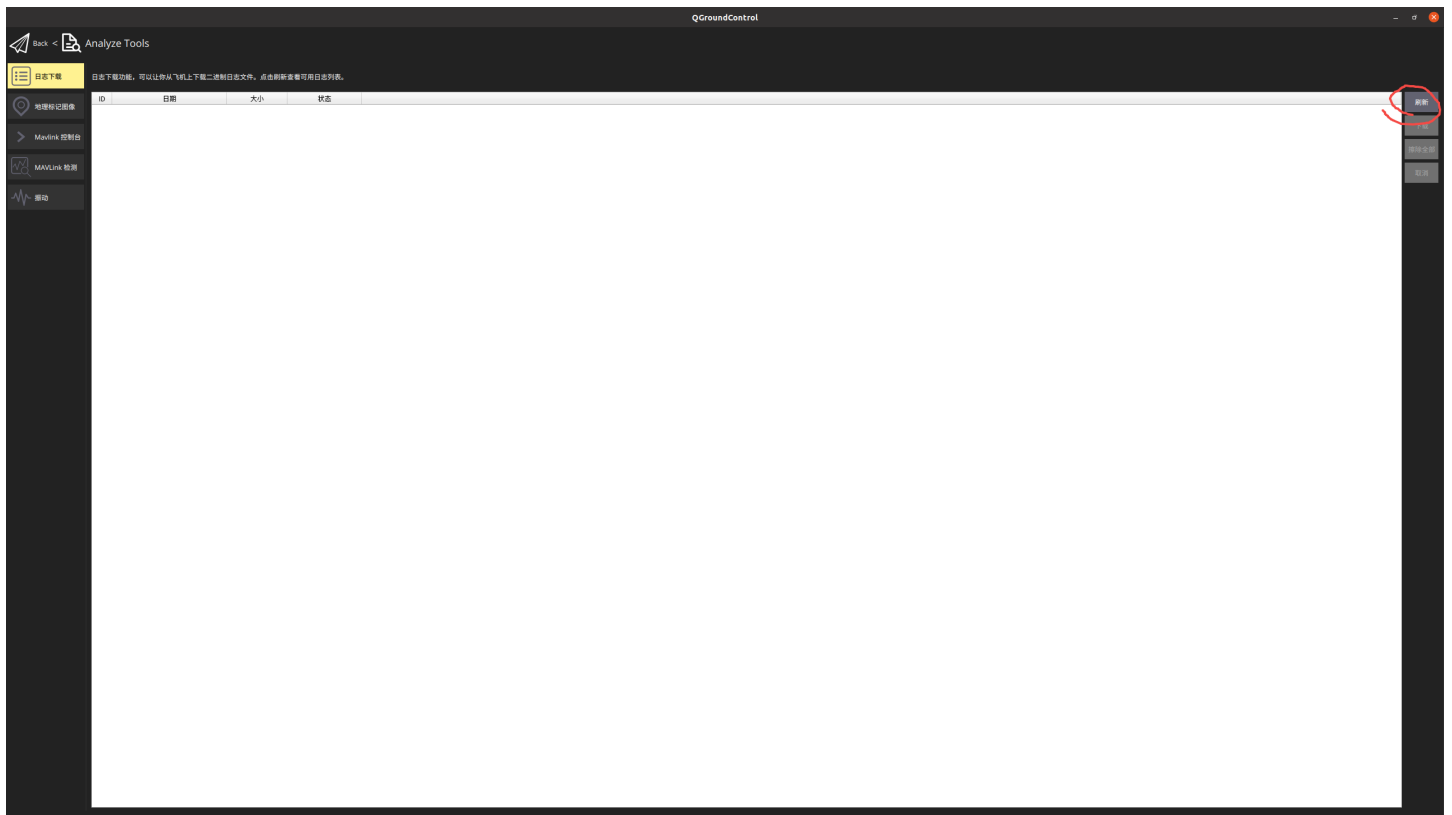
📖 pid



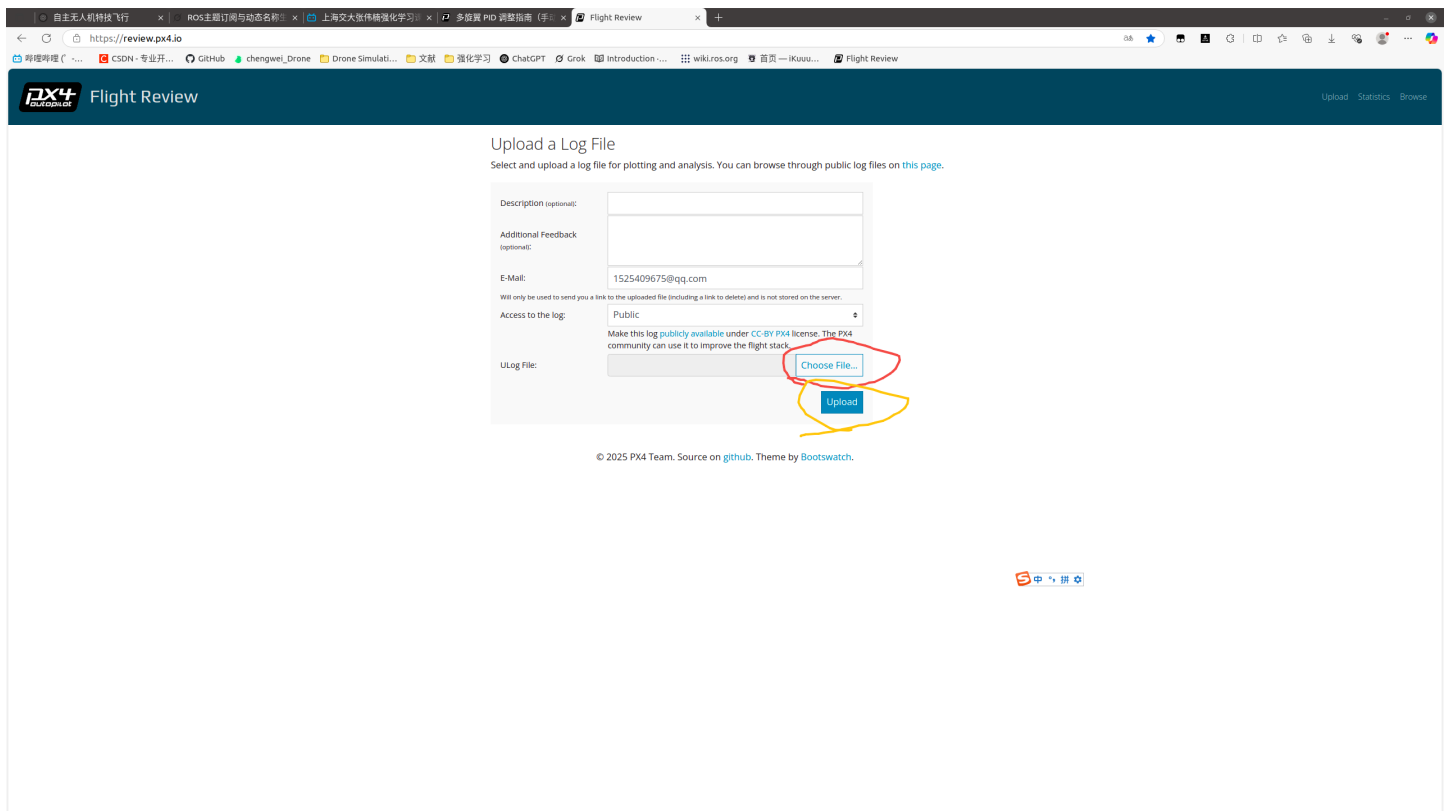
首先让飞机起飞，悬停一段时间，之后让飞机进行左右大机动的飞行，之后再进行前后的大机动飞行，之后可以无人机进行转yaw的飞行，最后降落等操作。



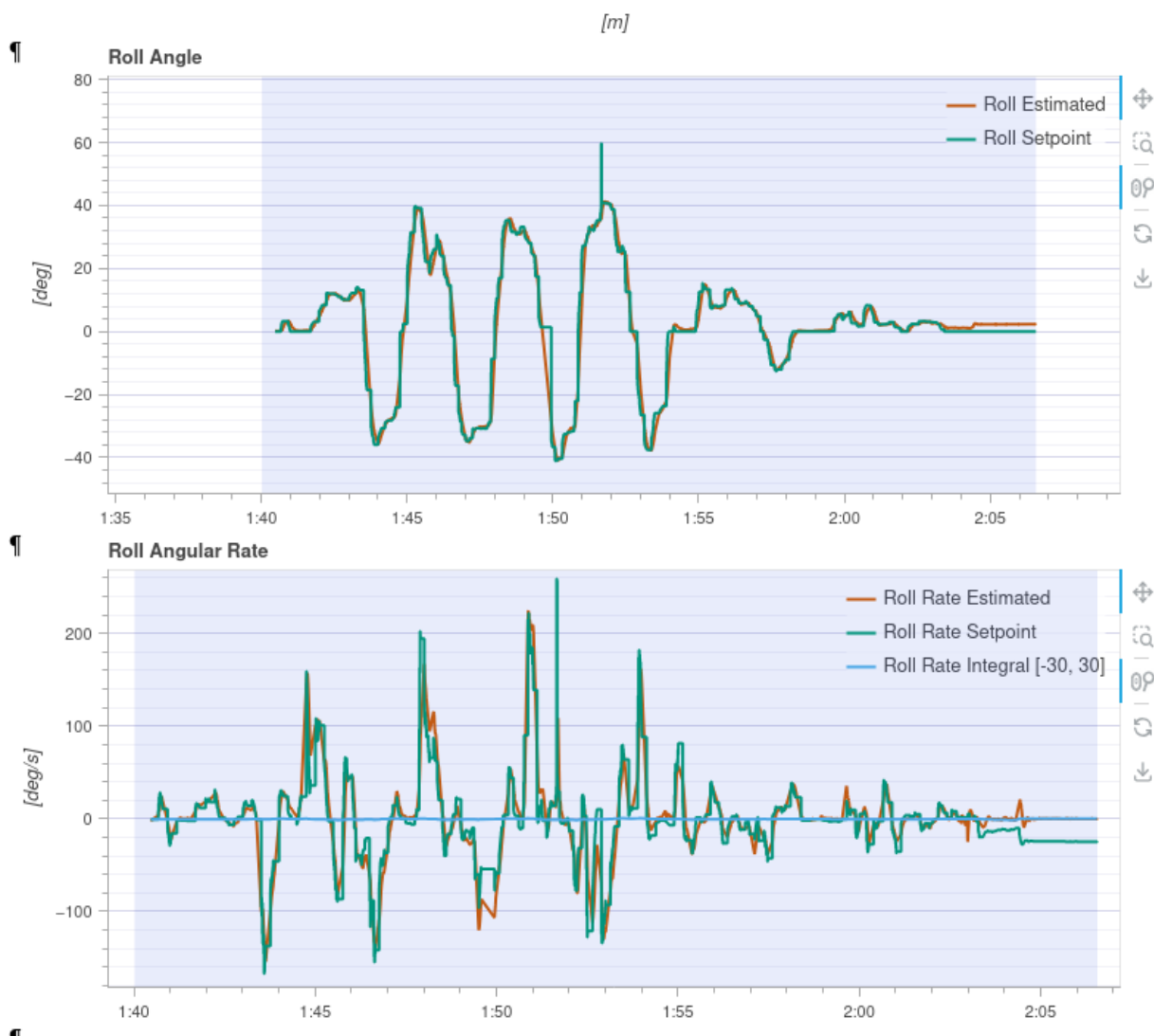
之后将飞机的飞控使用type c连接到电脑上，打开qgc，当界面加载完成之后，点击左上角，进入analyze tools。



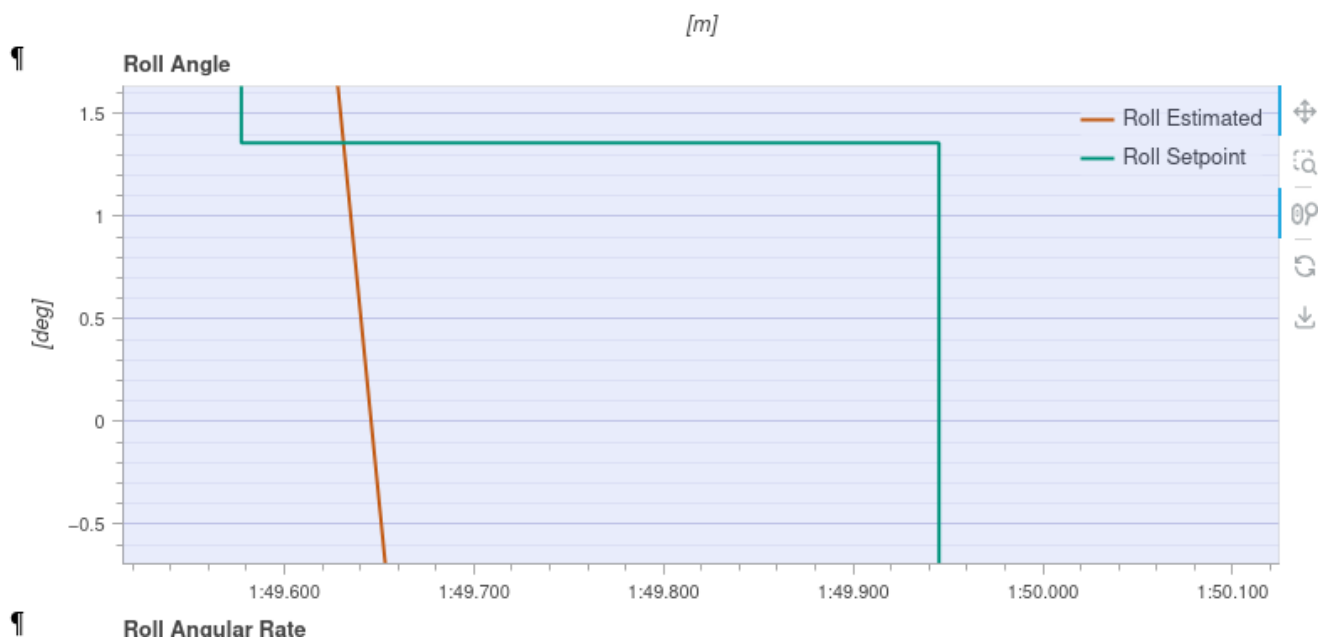
进入日志下载，点击右边的刷新，会将log刷新出来，之后下载过程那个时间段飞行的log，打开 <https://review.px4.io/>



将刚才的log文件加载进来并upload，等待其上传并解析成功。



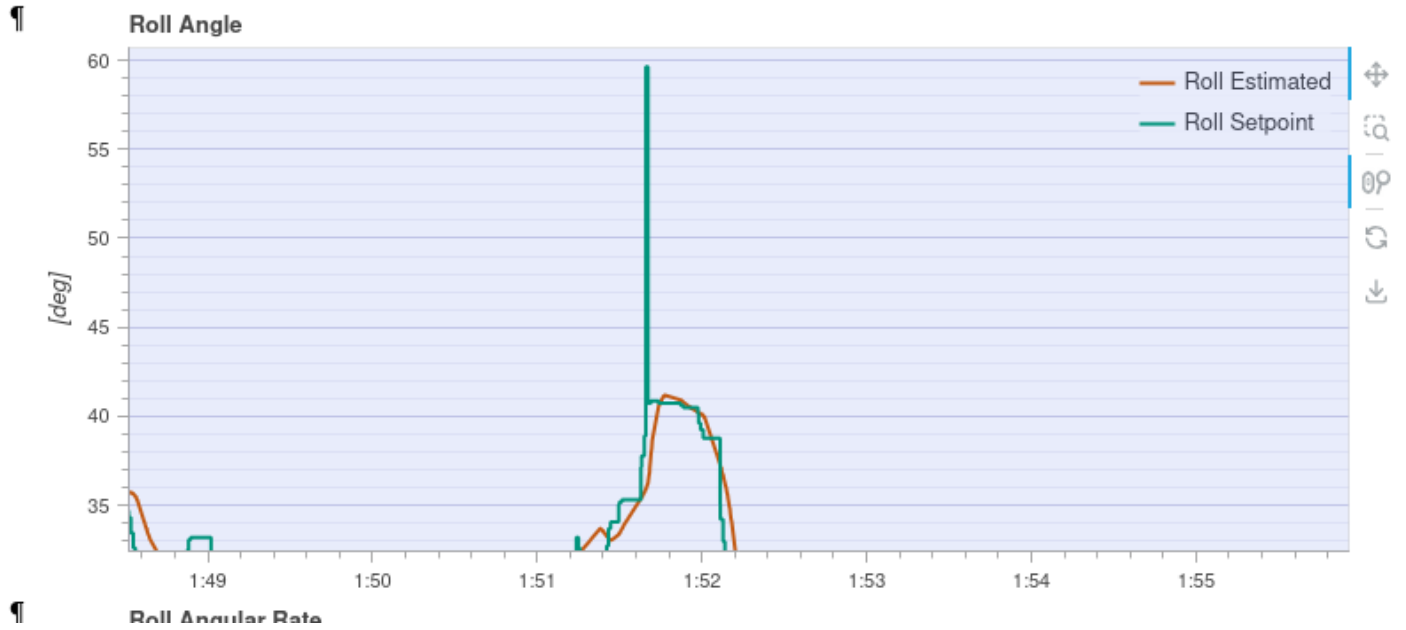
解析成功之后会出现这些图，x轴表示延迟，一般将延迟控制在100-150是较为优的。绿色的是我们期望达到的，红色的是我们输出的。先大致看一下哪个位置的延迟较高，然后用鼠标拉进放大观看。



发现延迟大概300毫秒需要调参。

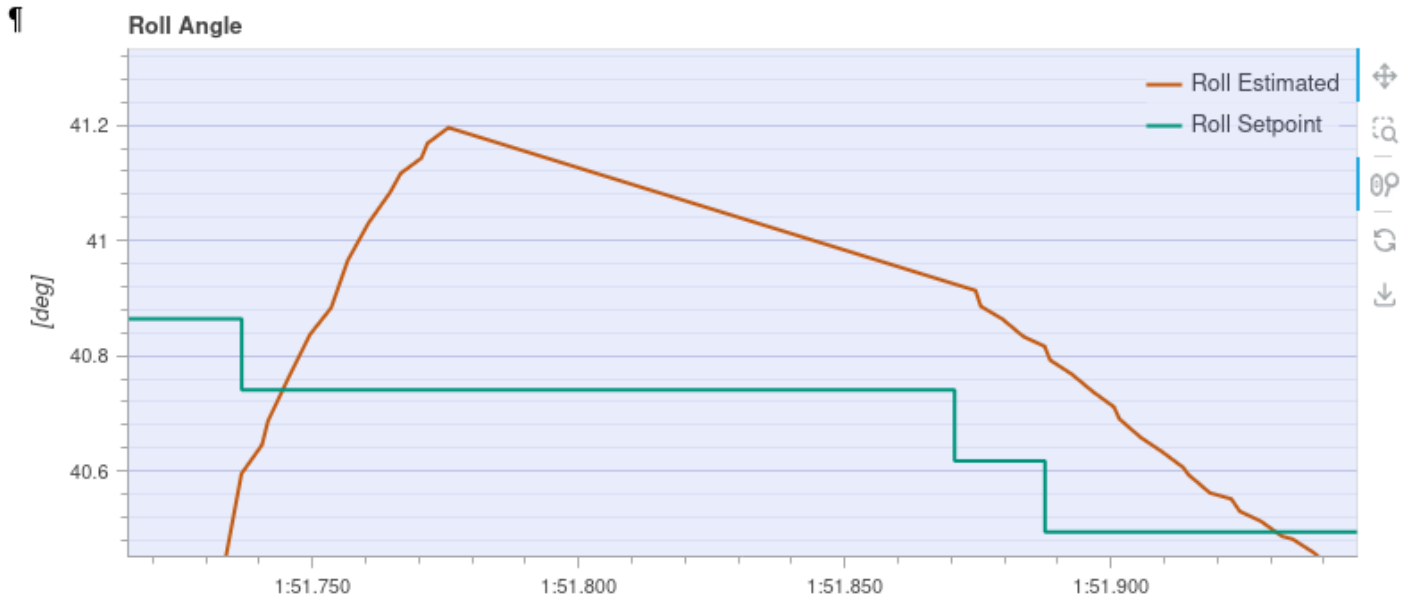
y轴表示跟踪误差，同样的先大致看一眼，然后放大拉近观看，像下图这种尖点位置肯定是有问题的。

[m]



像红色的线超出绿色的线就是超调。

[m]



观察图片可以发现大致跟踪误差为0.46deg，我们一般将误差控制在0.3较为优。

根据图上roll、yaw、pitch偏离程度来调节参数，参数位置如下图

QGroundControl

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Vehicle Setup

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Safety

PID Tuning

Flight Behavior

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Clear

☐ Show modified only

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Standard

Battery Calibration

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Geometry

Commander

Multicopter Position Control

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EKF2

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BAT1\_N\_CELLS

BAT1\_R\_INTERNAL

BAT1\_SOURCE

BAT1\_V\_CHANNEL

BAT1\_V\_CHARGED

BAT1\_V\_DIV

BAT1\_V\_EMPTY

BAT1\_V\_LOAD\_DROP

BAT\_AVRG\_CURRENT

BAT\_CRIT\_THR

BAT\_EMERGEN\_THR

BAT\_LOW\_THR

BAT\_V\_OFFS\_CURR

17.00000000

-1 mAh

-1

45 Battery

0.0050 Ohm

Power Module

-1

4.20 V

10.10000038

3.20 V

0.10 V

15 A

7.00 %

5.00 %

15.00 %

0.00000000

Battery 1 current per volt (A/V)

Battery 1 capacity

Battery 1 Current ADC Channel

Number of cells for battery 1

Explicitly defines the per cell internal resistance for battery 1

Battery 1 monitoring source

Battery 1 Voltage ADC Channel

Full cell voltage

Battery 1 voltage divider (V divider)

Empty cell voltage

Voltage drop per cell on full throttle

Expected battery current in flight

Critical threshold

Emergency threshold

Low threshold

Offset in volt as seen by the ADC input of the current sensor

在搜索栏中搜索需要改的参数，如[MC\\_ROLLRATE\\_P](#)、[MC\\_ROLLRATE\\_I](#)、[MC\\_ROLLRATE\\_D](#)、[MC\\_ROLLRATE\\_K](#)、[MC\\_ROLL\\_P](#)