

618飞机pid调节

PX4 Guide (main)

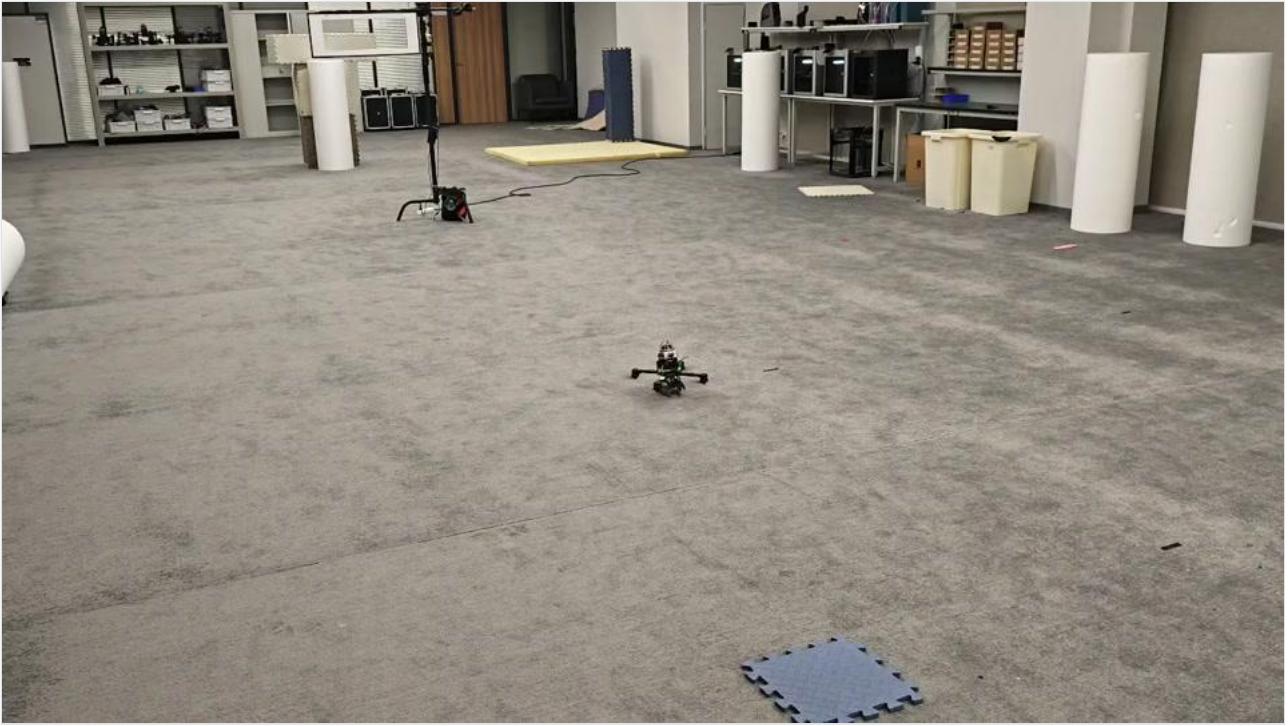
- Introduction >
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https://docs.px4.io/main/zh/config/autotune_mc.html

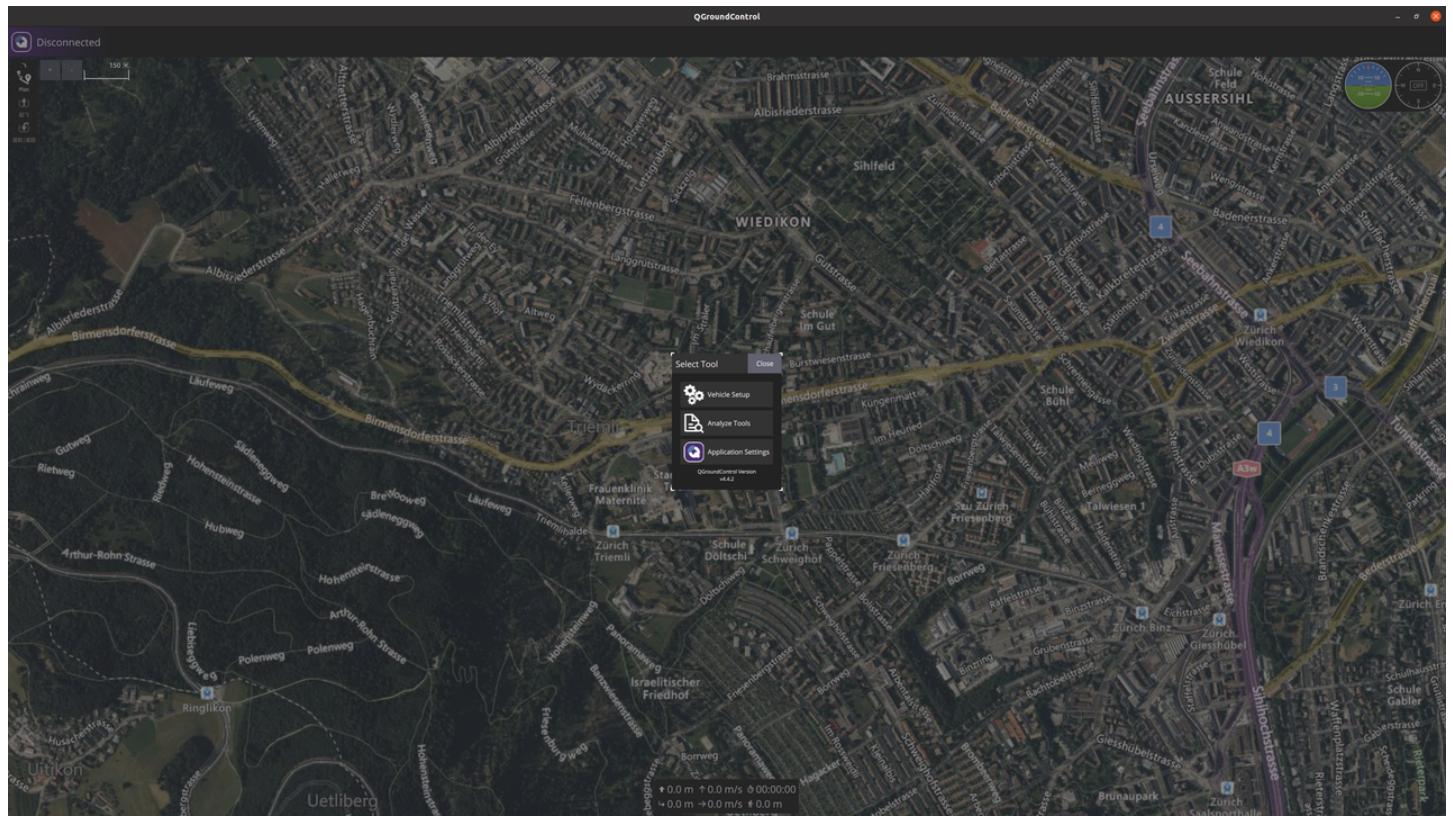
https://docs.ncynl.com/en/px4/zh/config_mc/pid_tuning_guide_multicopter.html

首先学习上述三个PX4官方文档内容

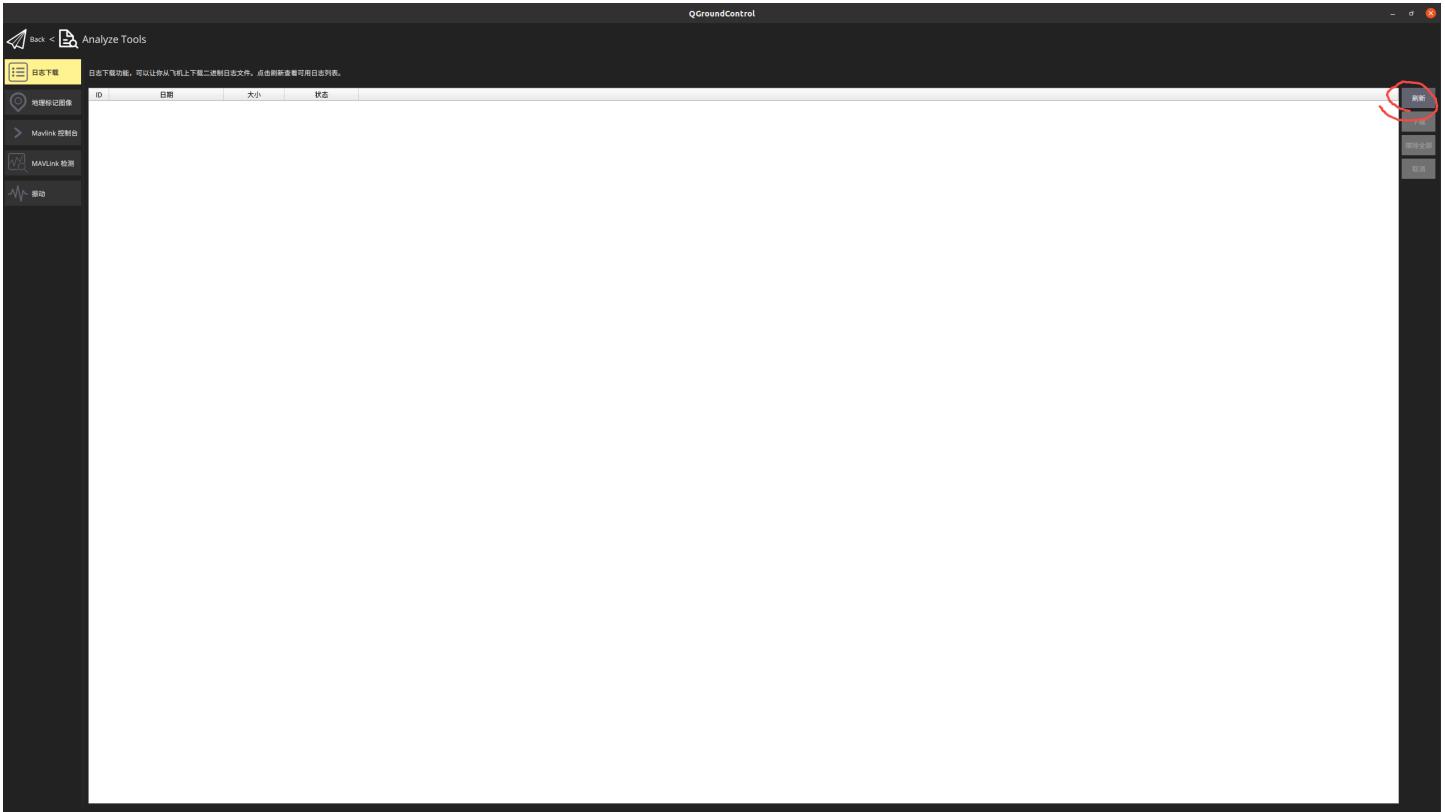
pid



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/>

Upload a Log File

Select and upload a log file for plotting and analysis. You can browse through public log files on [this page](#).

Description (optional):

Additional Feedback (optional):

E-Mail:

Will only be used to send you a link to the uploaded file (including a link to delete) and is not stored on the server.

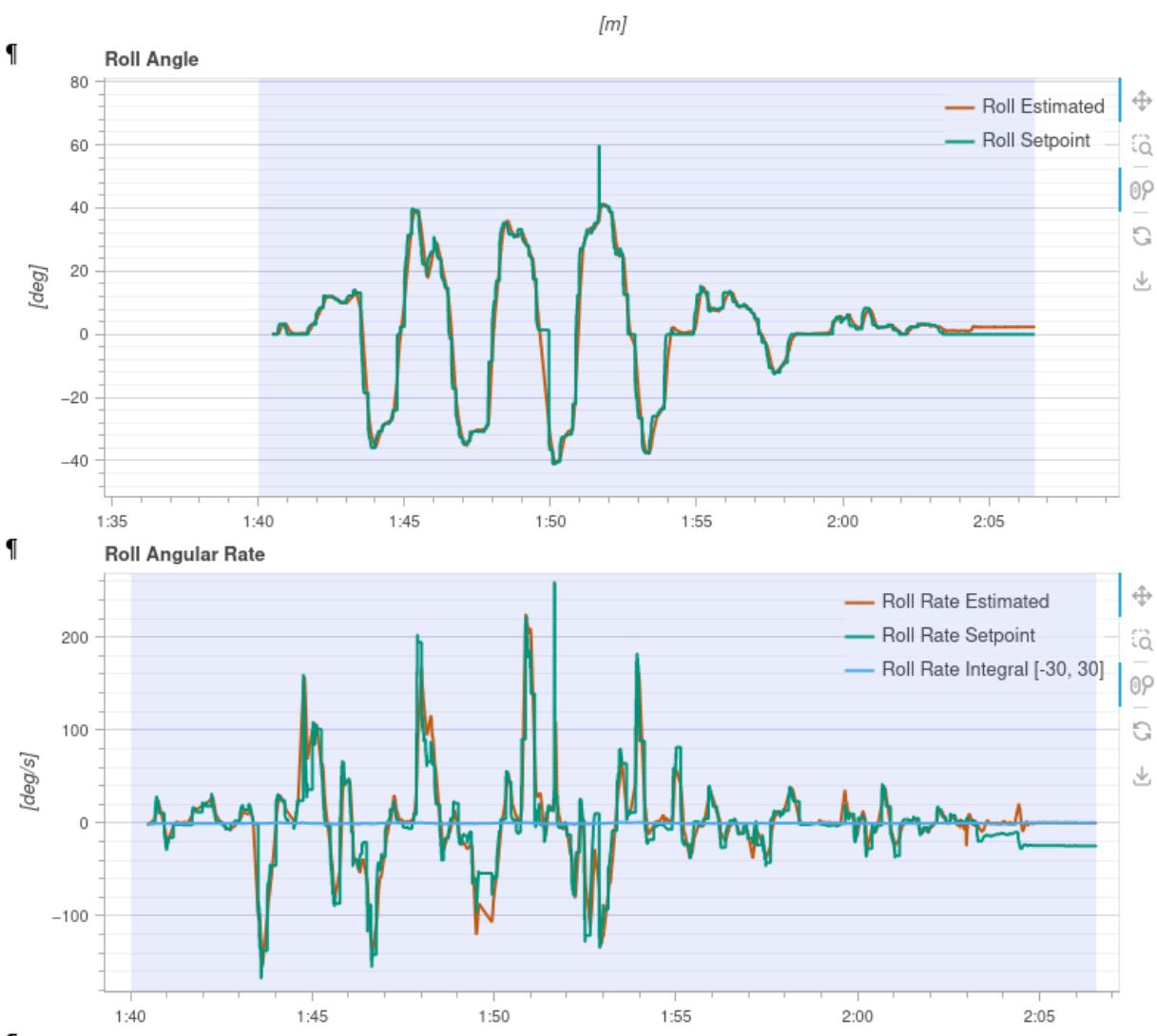
Access to the log:

Make this log [publicly available](#) under CC-BY PX4 license. The PX4 community can use it to improve the flight stack.

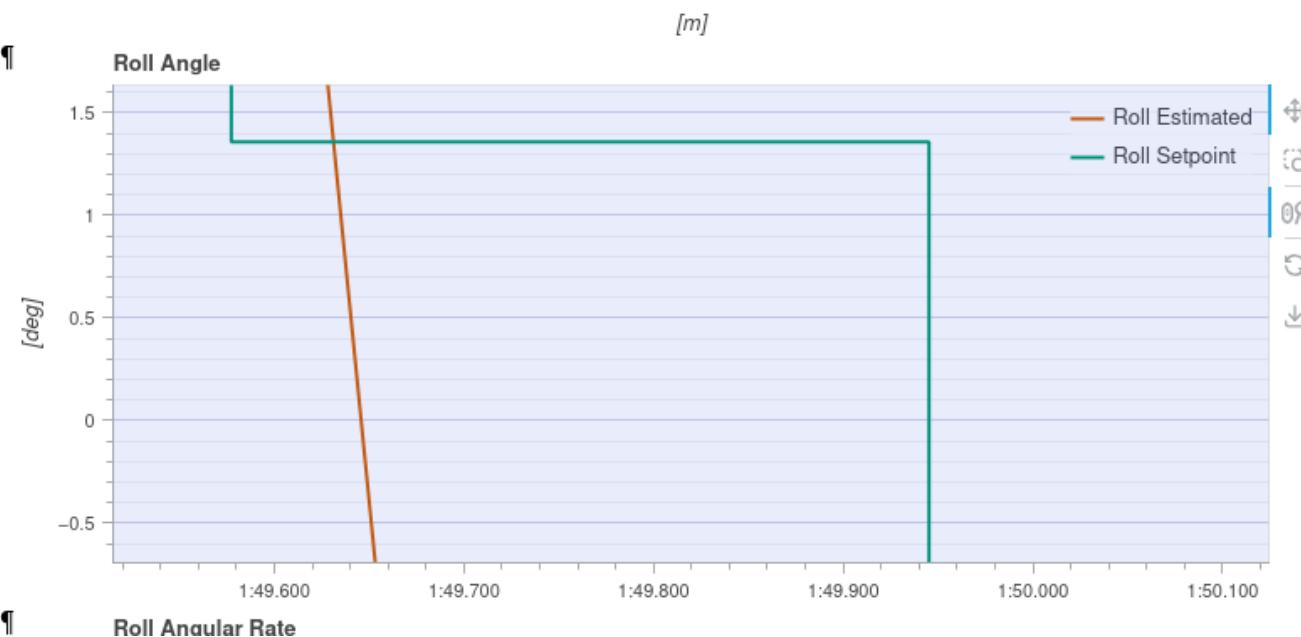
ULog File:

© 2025 PX4 Team. Source on [github](#). Theme by [Bootstrap](#).

将刚才的log文件加载进来并upload，等待其上传并解析成功。

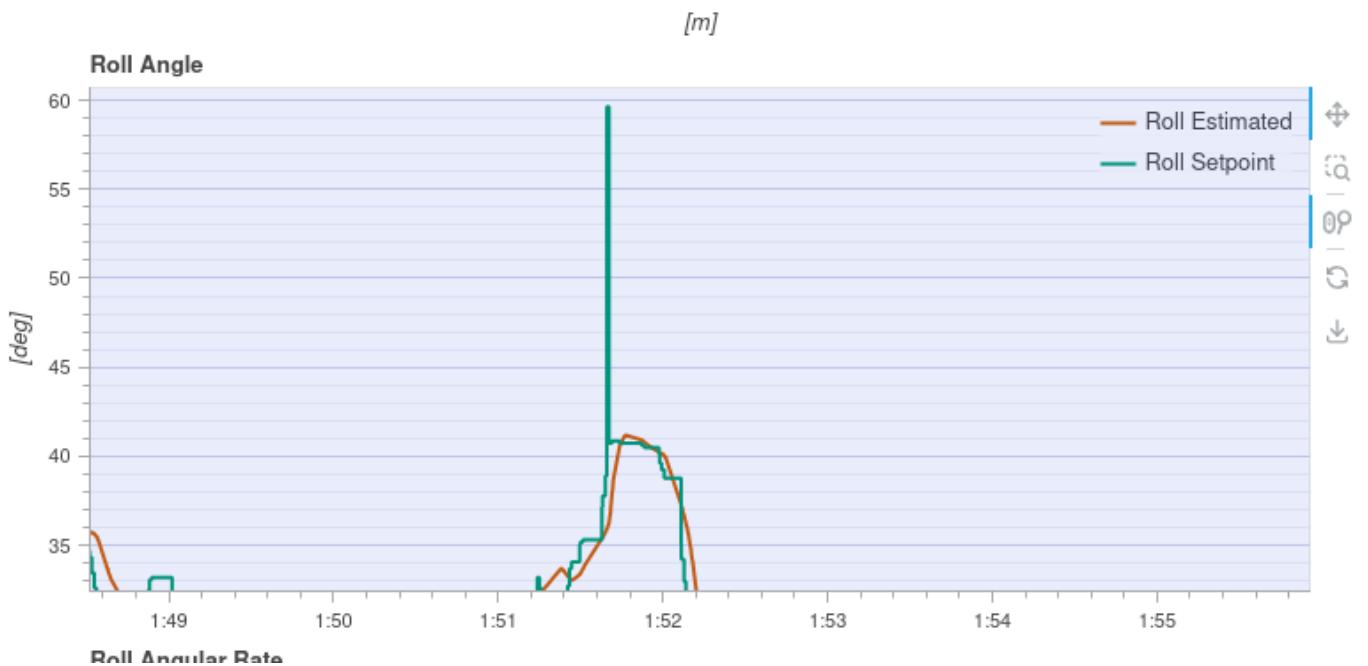


解析成功之后会出现这些图，x轴表示延迟，一般将延迟控制在100-150是较为优的。绿色的是我们期望达到的，红色的是我们输出的。先大致看一下哪个位置的延迟较高，然后用鼠标拉进放大观看。



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。



像红色的线超出绿色的线就是超调。



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

Back <  Vehicle Setup

Summary Search: Clear Show modified only

Firmware Tools

Standard	BAT1_A_PER_V	17.00000000	Battery 1 current per volt (A/V)
Battery Calibration	BAT1_CAPACITY	-1 mAh	Battery 1 capacity
Sensors	BAT1_I_CHANNEL	-1	Battery 1 Current ADC Channel
Camera Control	BAT1_N_CELLS	45 Battery	Number of cells for battery 1
Geometry	BAT1_R_INTERNAL	0.0050 Ohm	Explicitly defines the per cell internal resistance for battery 1
Commander	BAT1_SOURCE	Power Module	Battery 1 monitoring source
Multicopter Position Control	BAT1_V_CHANNEL	-1	Battery 1 Voltage ADC Channel
DShot	BAT1_V_CHARGED	4.20 V	Full cell voltage
EKF2	BAT1_V_DIV	10.10000038	Battery 1 voltage divider (V divider)
Events	BAT1_V_EMPTY	3.20 V	Empty cell voltage
Failure Detector	BAT1_V_LOAD_DROP	0.10 V	Voltage drop per cell on full throttle
Follow target	BAT_AVRG_CURRENT	15 A	Expected battery current in flight
FW Performance	BAT_CRIT THR	7.00 %	Critical threshold
FW Attitude Control	BAT_EMERGEN THR	5.00 %	Emergency threshold
FW TECS	BAT_LOW THR	15.00 %	Low threshold
Geofence	BAT_V_OFFSET_CURR	0.00000000	Offset in volt as seen by the ADC input of the current sensor
Rover Position Control			
GPS			
Hover Thrust Estimator			

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](#)