

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.8980567551161546, median 0.7083447992608783, std: 0.7498346209931275

Gyroscope error (imu0): mean 1.8510598789611907, median 1.3644042426140417, std: 1.711952387872899

Accelerometer error (imu0): mean 1.1723855280461235, median 0.8631667987381582, std: 1.1109417419203886

Residuals

Reprojection error (cam0) [px]: mean 0.8980567551161546, median 0.7083447992608783, std: 0.7498346209931275

Gyroscope error (imu0) [rad/s]: mean 0.004713291405161905, median 0.00347413655439832, std:

0.004359086687317752

Accelerometer error (imu0) [m/s^2]: mean 0.19106895808351793, median 0.1406741868965625, std:
0.18105518708847984

Transformation (cam0):

T_ci: (imu0 to cam0):

[[-0.00163957 0.99956725 -0.02937033 0.06449823]
[0.02238757 -0.02932632 -0.99931915 0.04466311]
[-0.99974802 -0.00229598 -0.0223298 -0.16631946]
[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[-0.00163957 0.02238757 -0.99974802 -0.1671717]
[0.99956725 -0.02932632 -0.00229598 -0.06354238]
[-0.02937033 -0.99931915 -0.0223298 0.04281316]
[0. 0. 0. 1.]]

timeshift cam0 to imu0: [s] (t_imu = t_cam + shift)

-0.16083584571565138

Gravity vector in target coords: [m/s^2]

[0.00370688 -9.80643051 0.0482688]

Calibration configuration

cam0

Camera model: pinhole

Focal length: [927.3060574361, 927.2113306474747]

Principal point: [647.1368473568529, 354.372336106029]

Distortion model: radtan

Distortion coefficients: [0.09042915919597855, -0.17615862547703662, -0.0011429319282755383, 0.002764615503021377]

Type: aprilgrid

Tags:

Rows: 6

Cols: 6

Size: 0.02 [m]

Spacing 0.006 [m]

IMU configuration

IMU0:

Model: calibrated

Update rate: 200

Accelerometer:

Noise density: 0.011524038185652905

Noise density (discrete): 0.16297451095455773

Random walk: 0.0012306092406376534

Gyroscope:

Noise density: 0.0001800482173579718

Noise density (discrete): 0.0025462663086874265

Random walk: 5.309855482461205e-05

T_ib (imu0 to imu0)

[[-1. 0. 0. 0.]

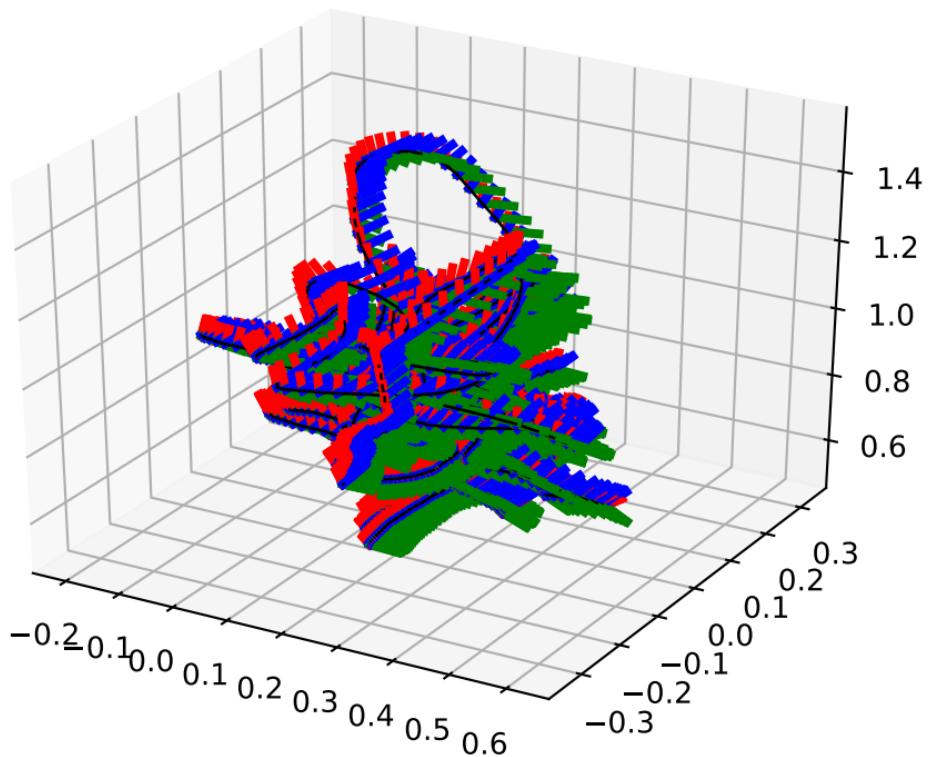
[0. 1. 0. 0.]

[0. 0. 1. 0.]

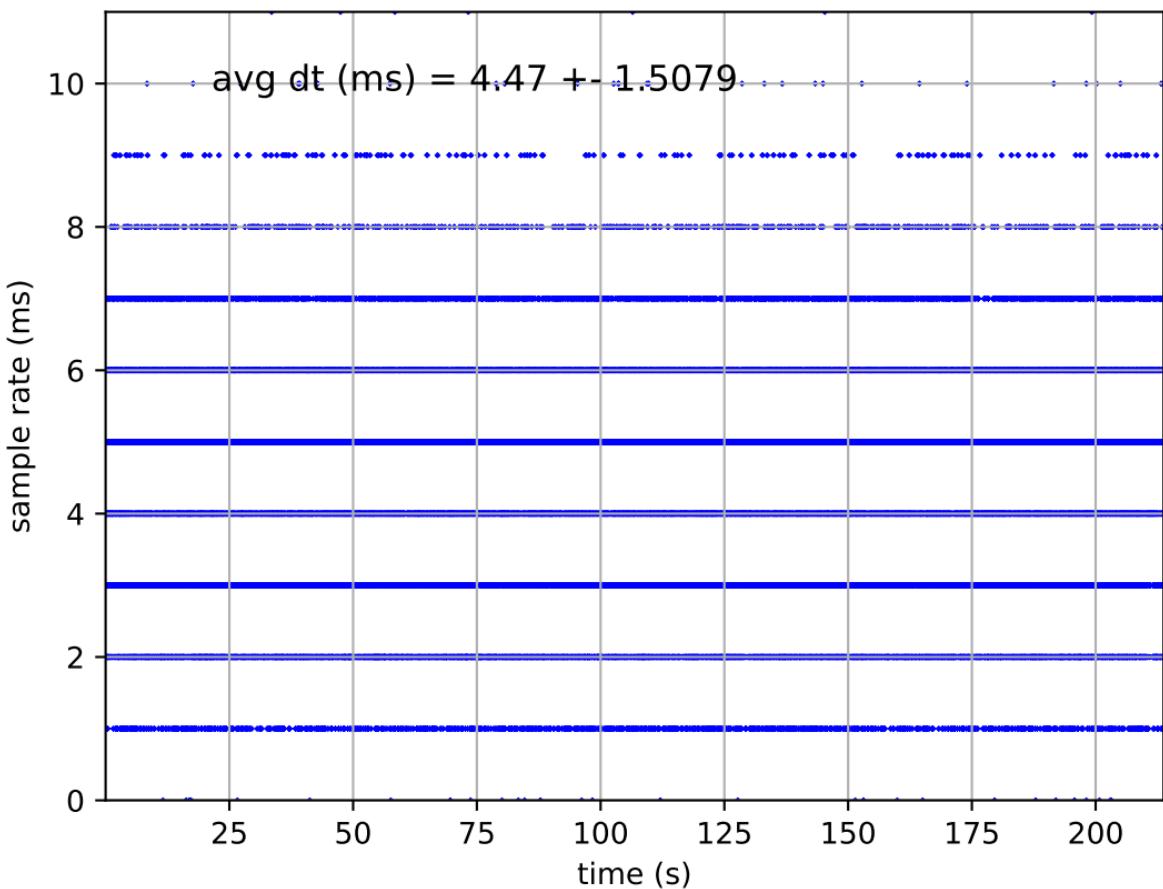
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

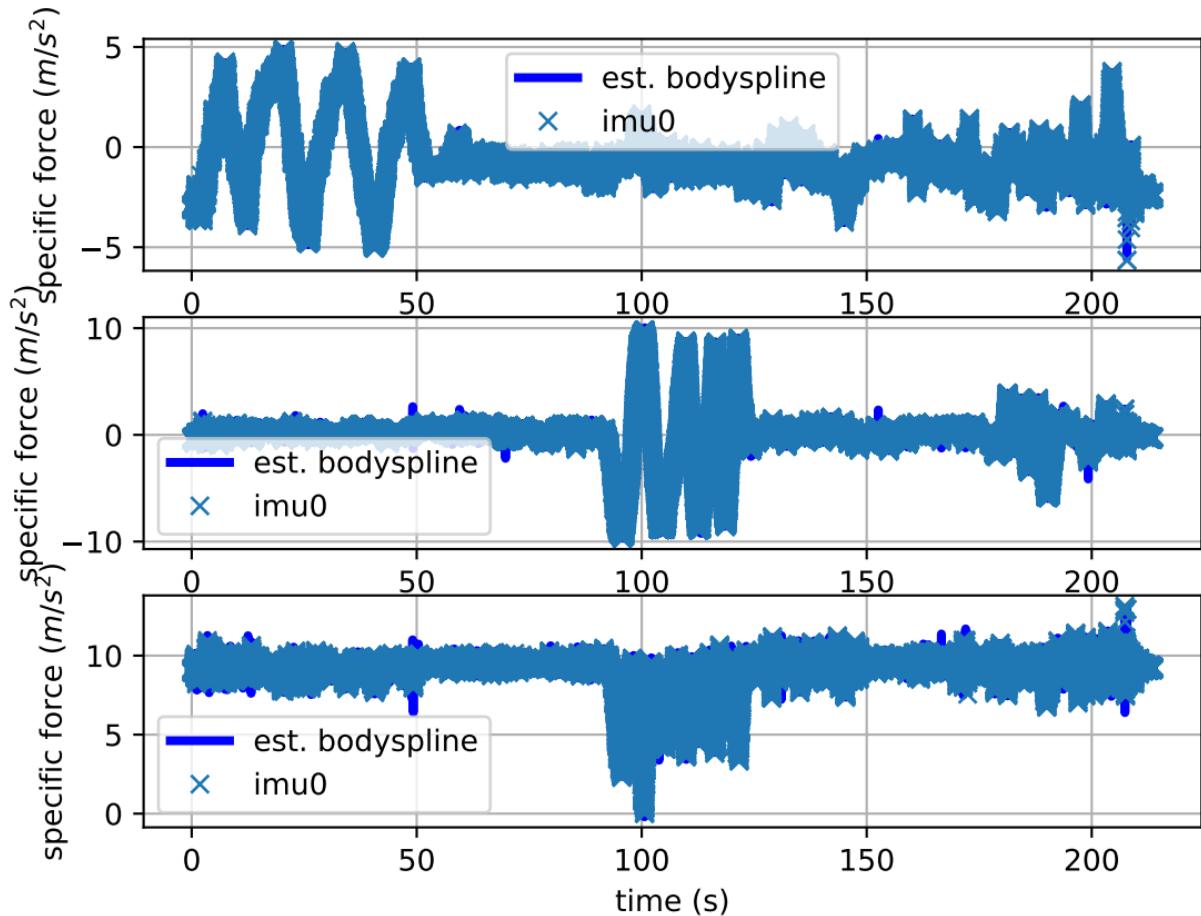
imu0: estimated poses



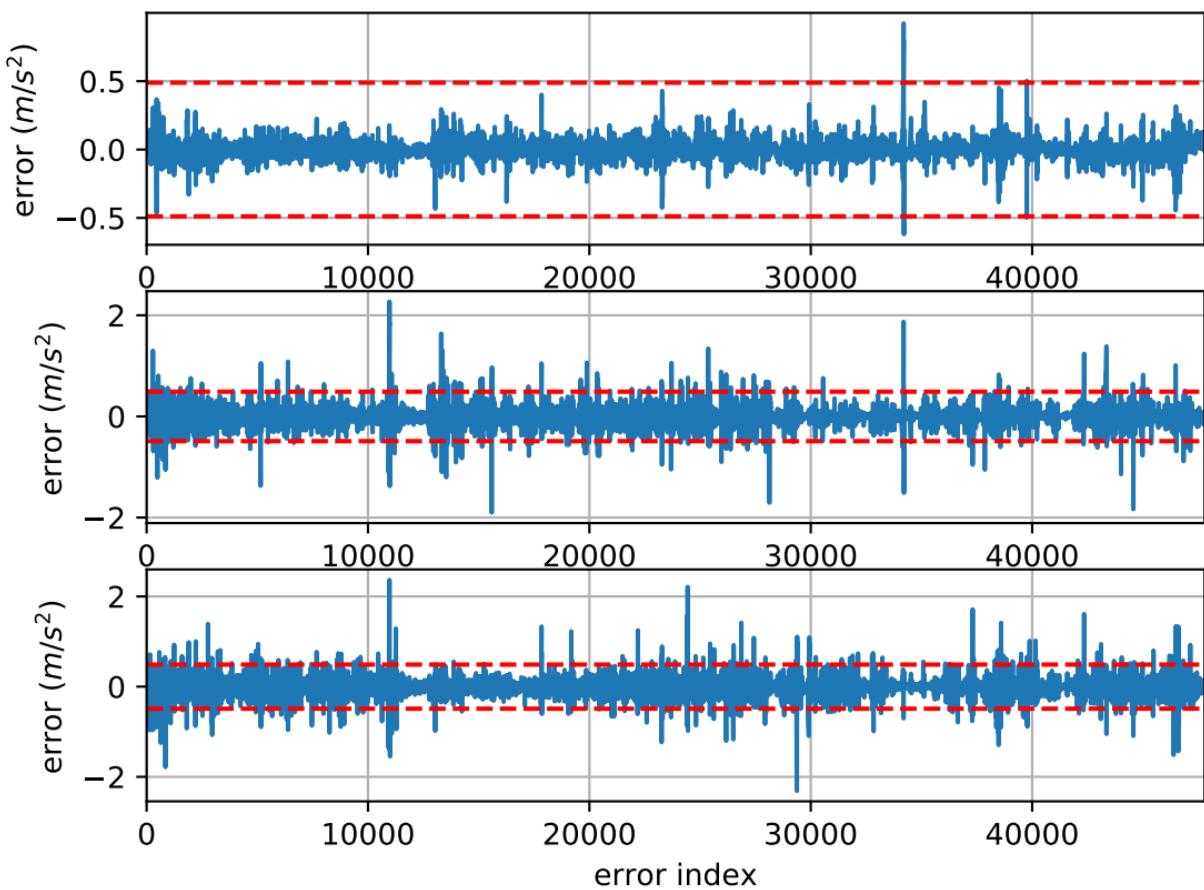
imu0: sample inertial rate



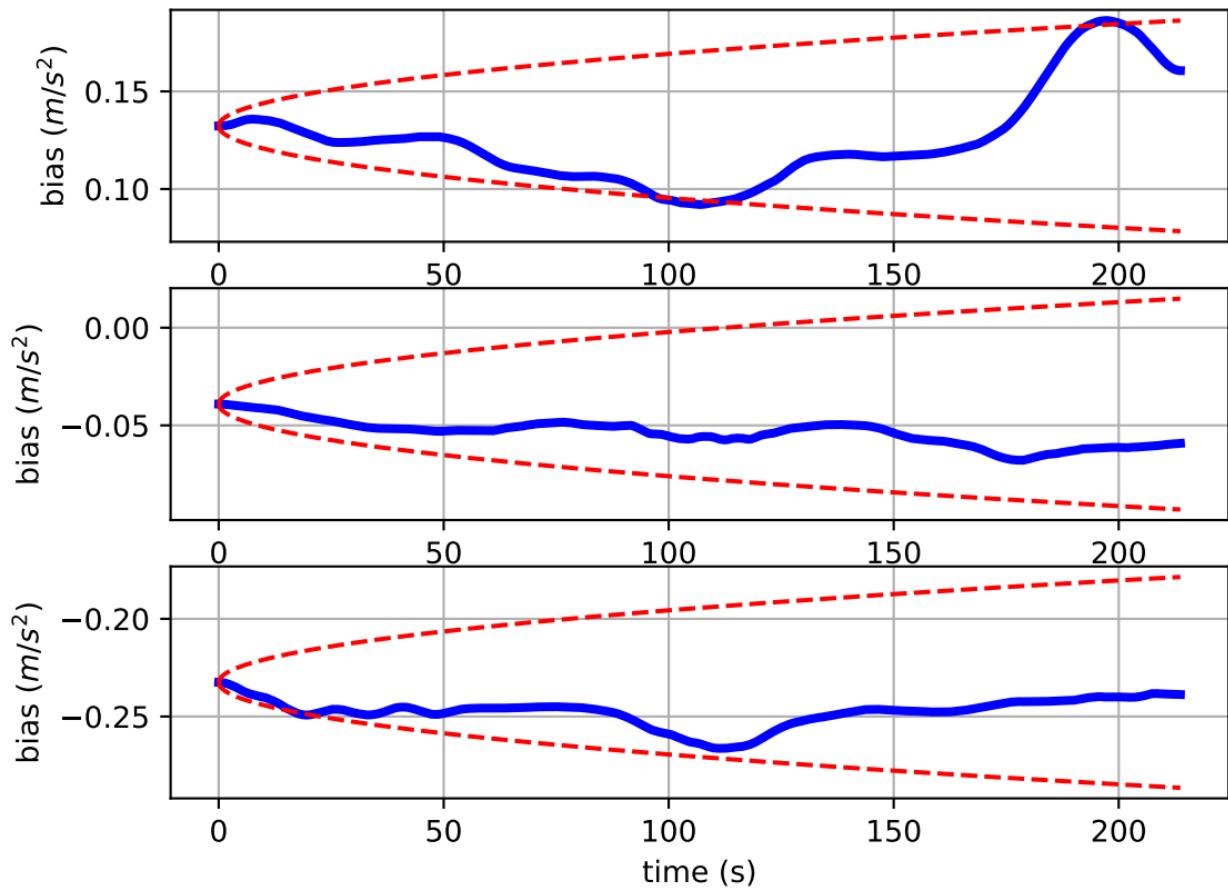
Comparison of predicted and measured specific force (imu0 frame)



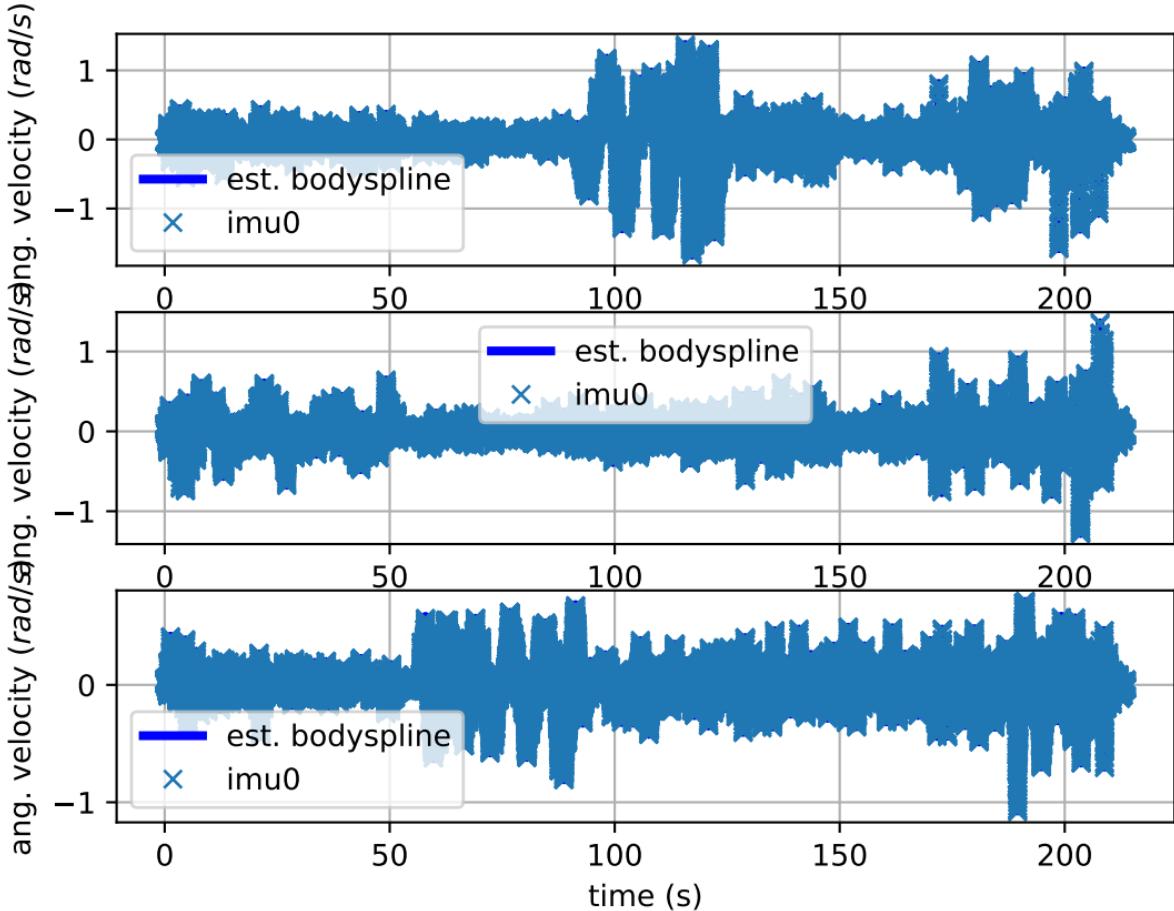
imu0: acceleration error



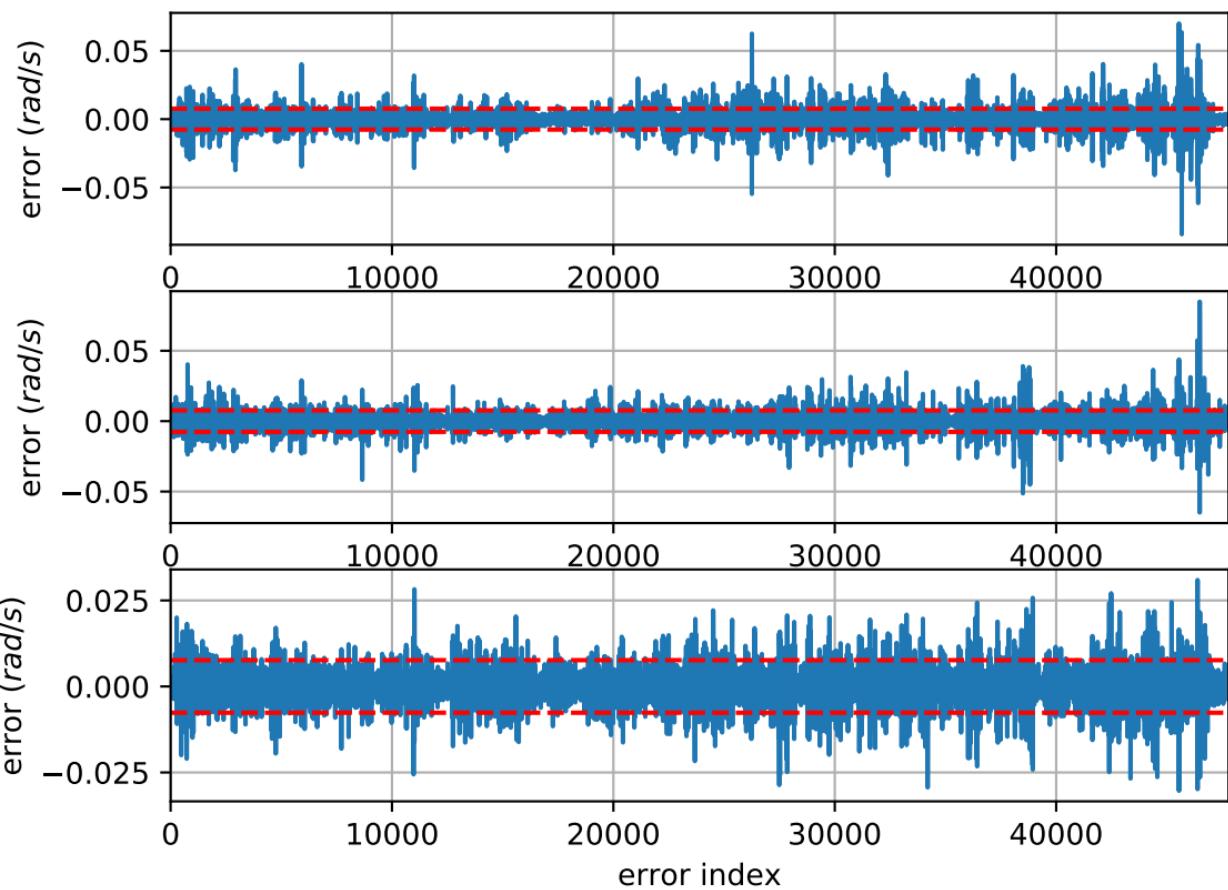
imu0: estimated accelerometer bias (imu frame)



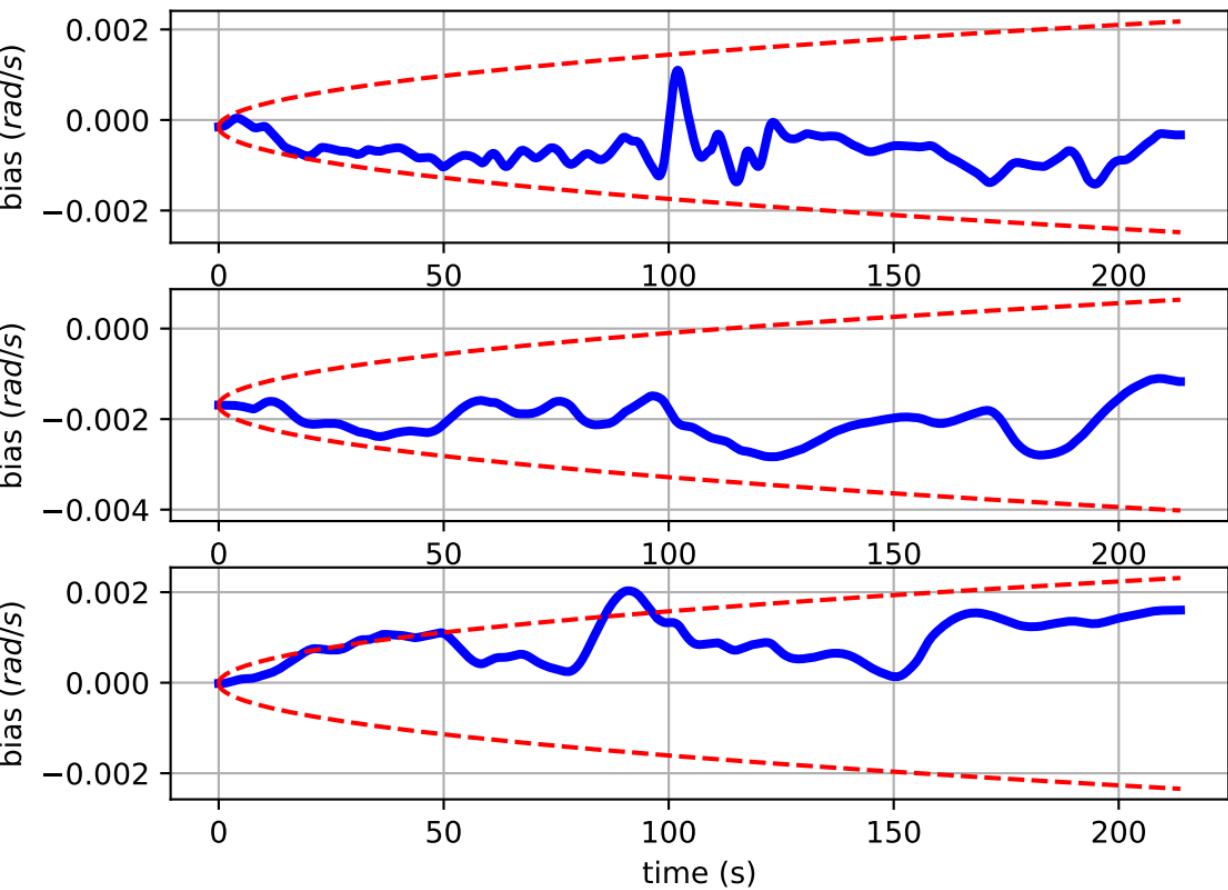
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

