

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.7789302716563268, median 0.6331235019280423, std: 0.5778492384588078

Gyroscope error (imu0): mean 2.6266016163044754, median 2.0678356291265994, std: 2.2378658519567542

Accelerometer error (imu0): mean 2.1579997946147405, median 1.7639222588505192, std: 1.7559882478827387

Residuals

Reprojection error (cam0) [px]: mean 0.7789302716563268, median 0.6331235019280423, std: 0.5778492384588078

Gyroscope error (imu0) [rad/s]: mean 0.007613397870462638, median 0.005993773580863533, std:

0.0064866186809250746

Accelerometer error (imu0) [m/s^2]: mean 0.06299644522945094, median 0.05149251276389677, std:
0.051260902692093734

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.99984593 -0.01452024 0.00986334 0.01602808]
[0.01503836 0.99839158 -0.05466352 -0.00829176]
[-0.00905374 0.05480343 0.99845612 -0.00628396]
[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.99984593 0.01503836 -0.00905374 -0.01595781]
[-0.01452024 0.99839158 0.05480343 0.00885554]
[0.00986334 -0.05466352 0.99845612 0.00566291]
[0. 0. 0. 1.]]

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

0.014187015439599037

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

[0.12144635 -9.80567395 -0.04931558]

Calibration configuration

cam0

Camera model: pinhole

Focal length: [610.1335559441417, 613.5861937618225]

Principal point: [322.7614324987148, 283.97258711268006]

Distortion model: radtan

Distortion coefficients: [0.127239143170079, -0.17189525099448597, 0.036598002109648545,
-0.0005475253359457955]

Type: aprilgrid

Tags:

Rows: 6

Cols: 6

Size: 0.0205 [m]

Spacing 0.00630006 [m]

IMU configuration

IMU0:

Model: calibrated

Update rate: 200.0

Accelerometer:

Noise density: 0.002064189891192468

Noise density (discrete): 0.029192053394378317

Random walk: 0.00022919238444020807

Gyroscope:

Noise density: 0.0002049600985797649

Noise density (discrete): 0.0028985735115683005

Random walk: 3.1998555455947417e-06

T_ib (imu0 to imu0)

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

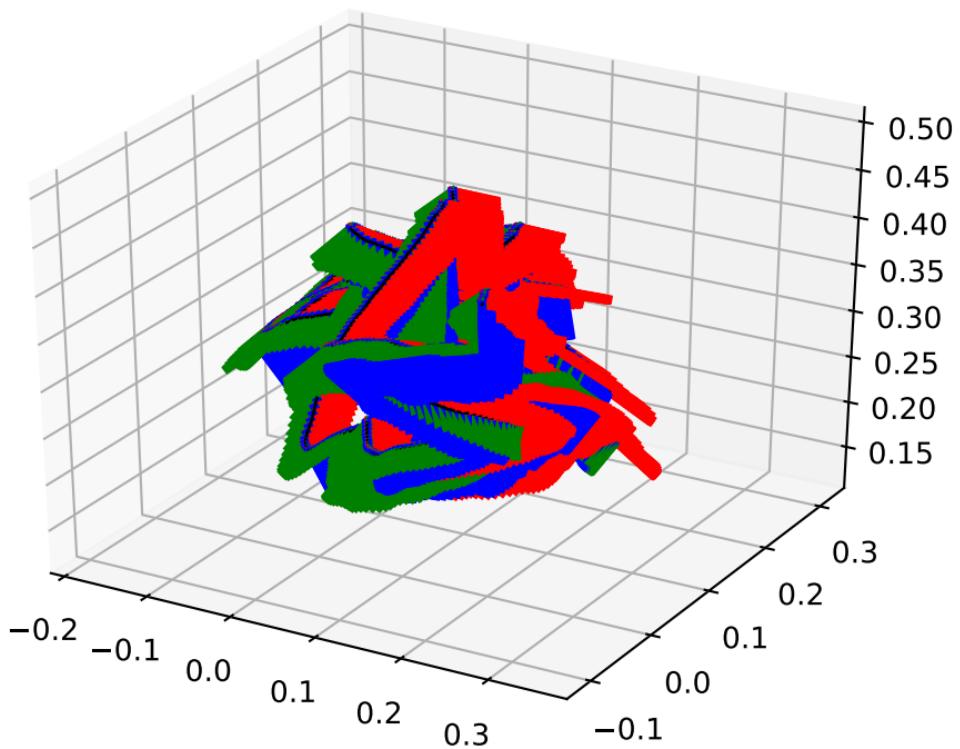
[0. 1. 0. 0.]

[0. 0. 1. 0.]

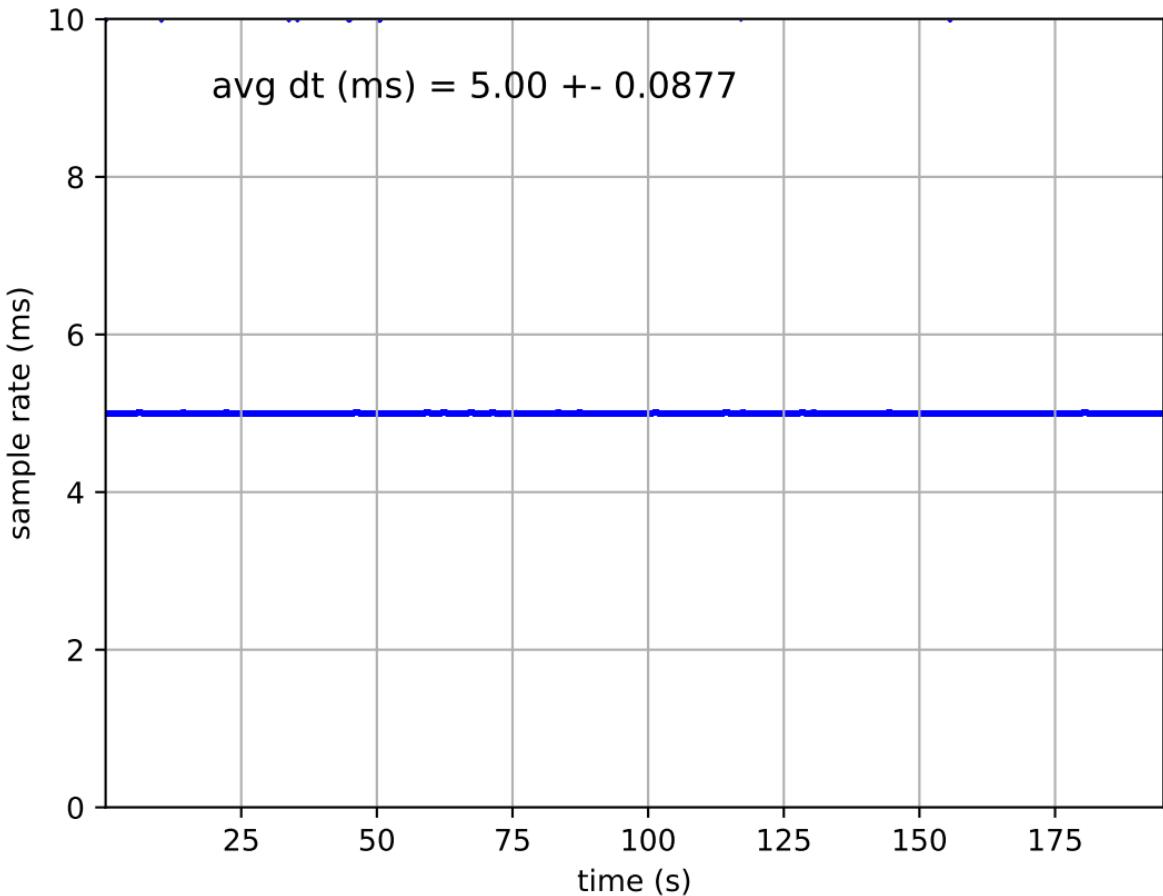
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

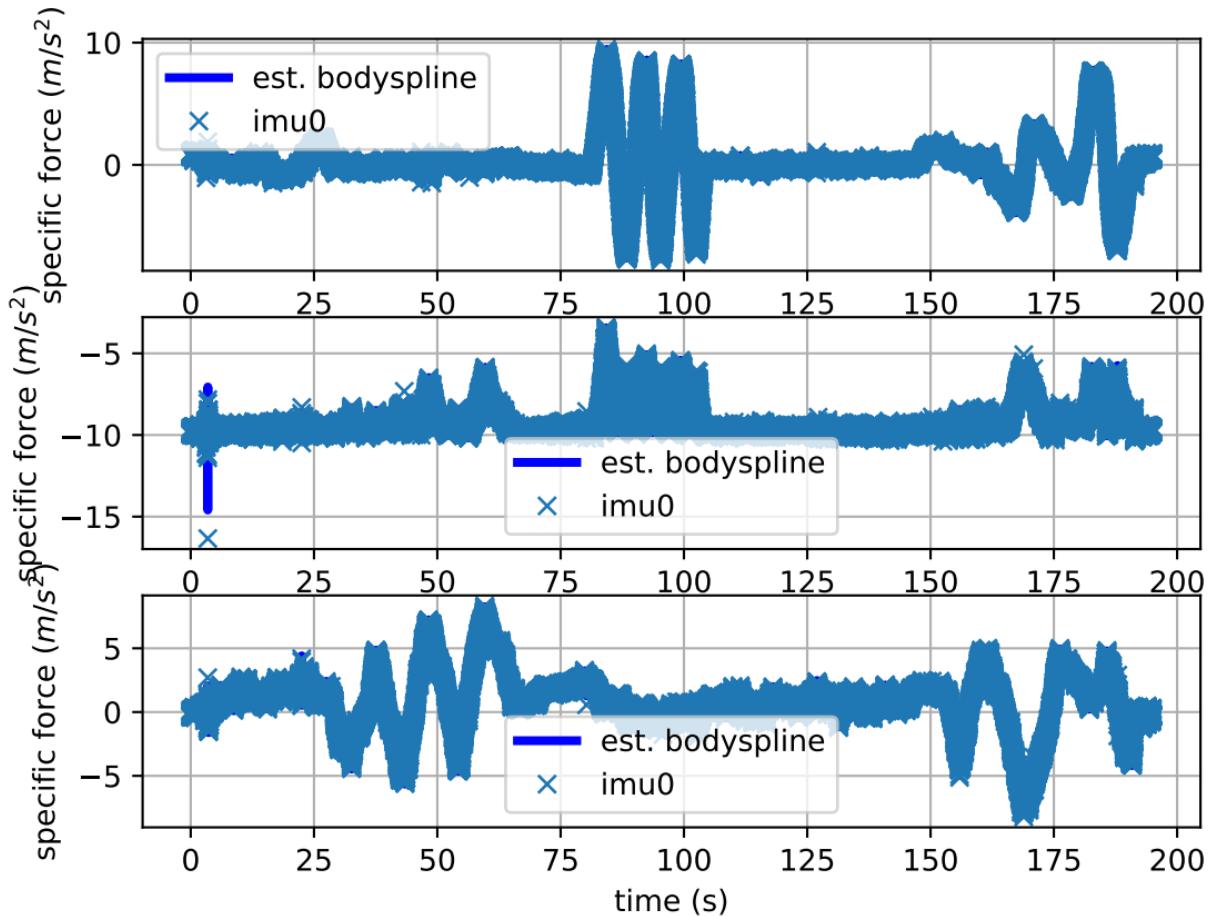
imu0: estimated poses



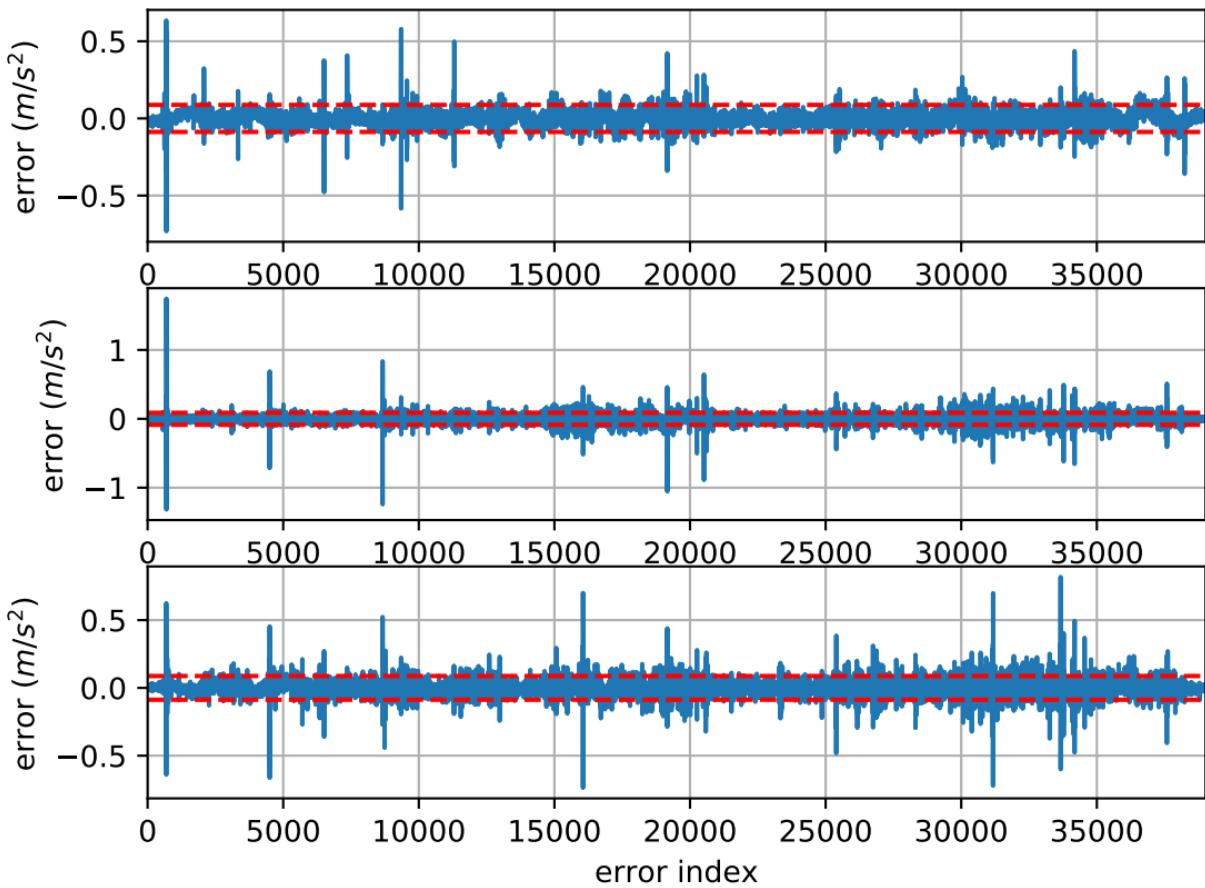
imu0: sample inertial rate



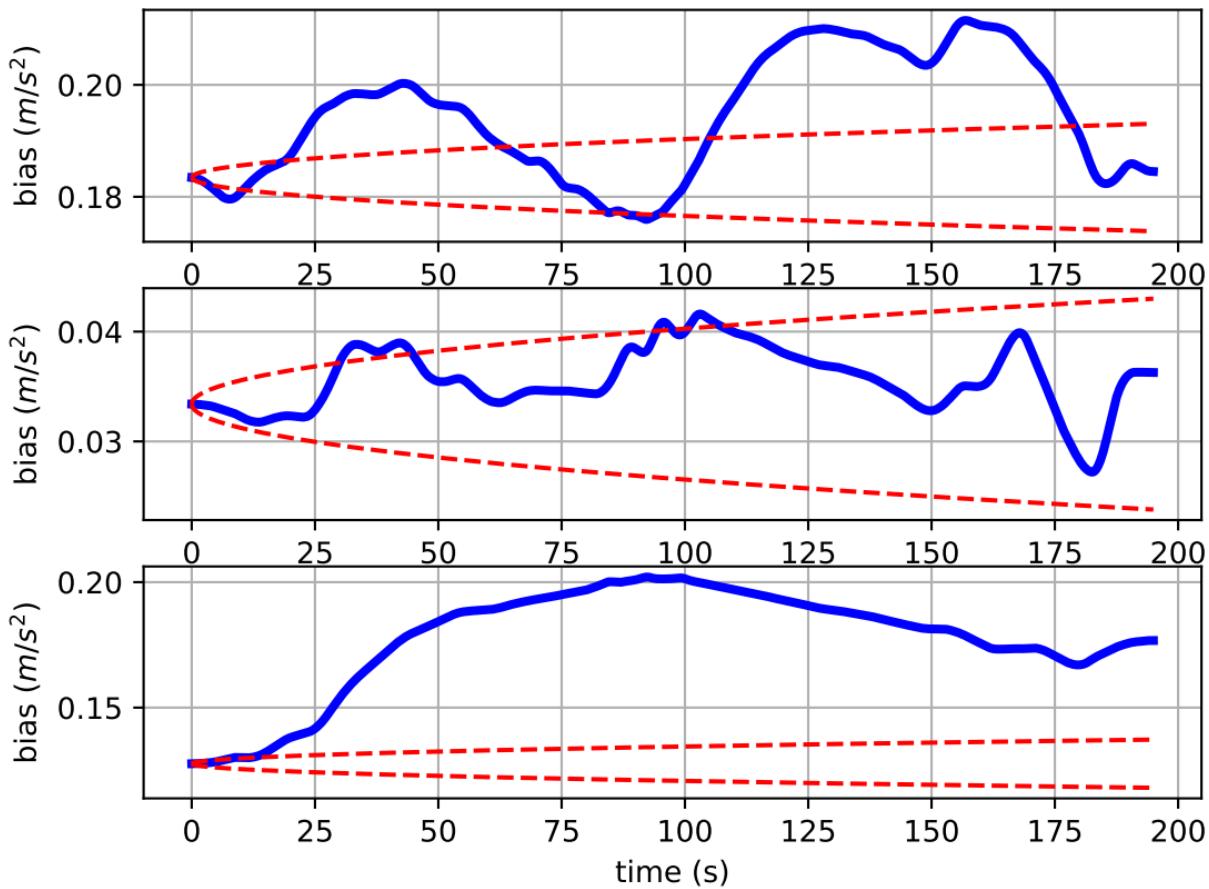
Comparison of predicted and measured specific force (imu0 frame)



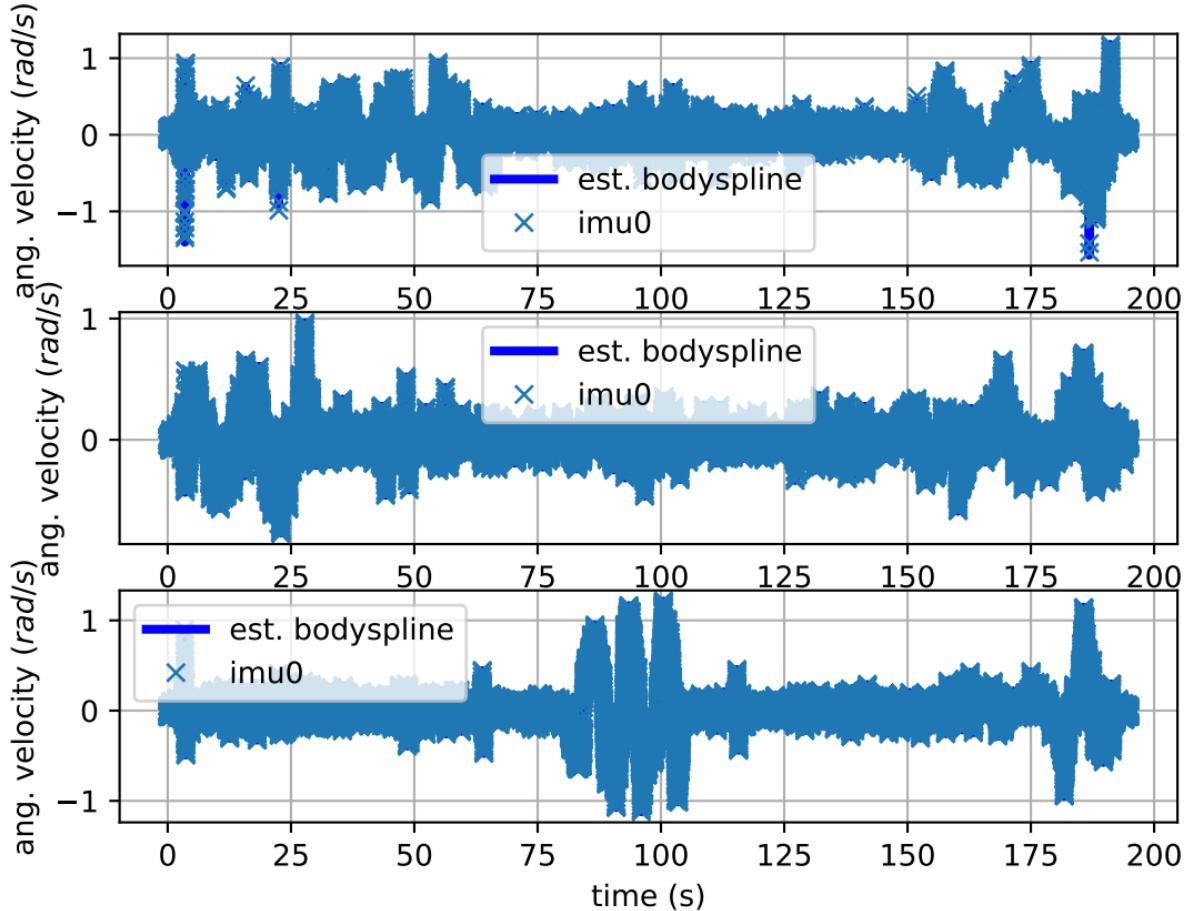
imu0: acceleration error



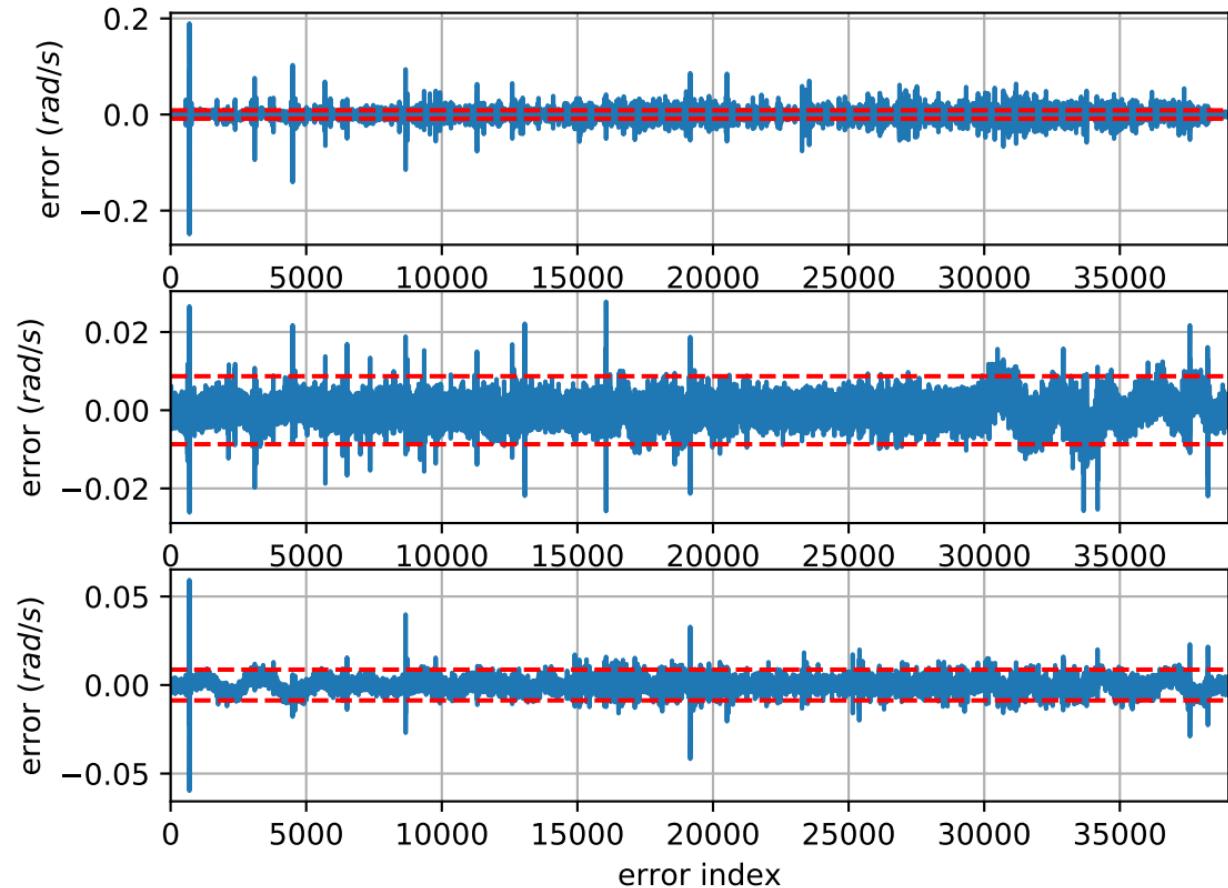
imu0: estimated accelerometer bias (imu frame)



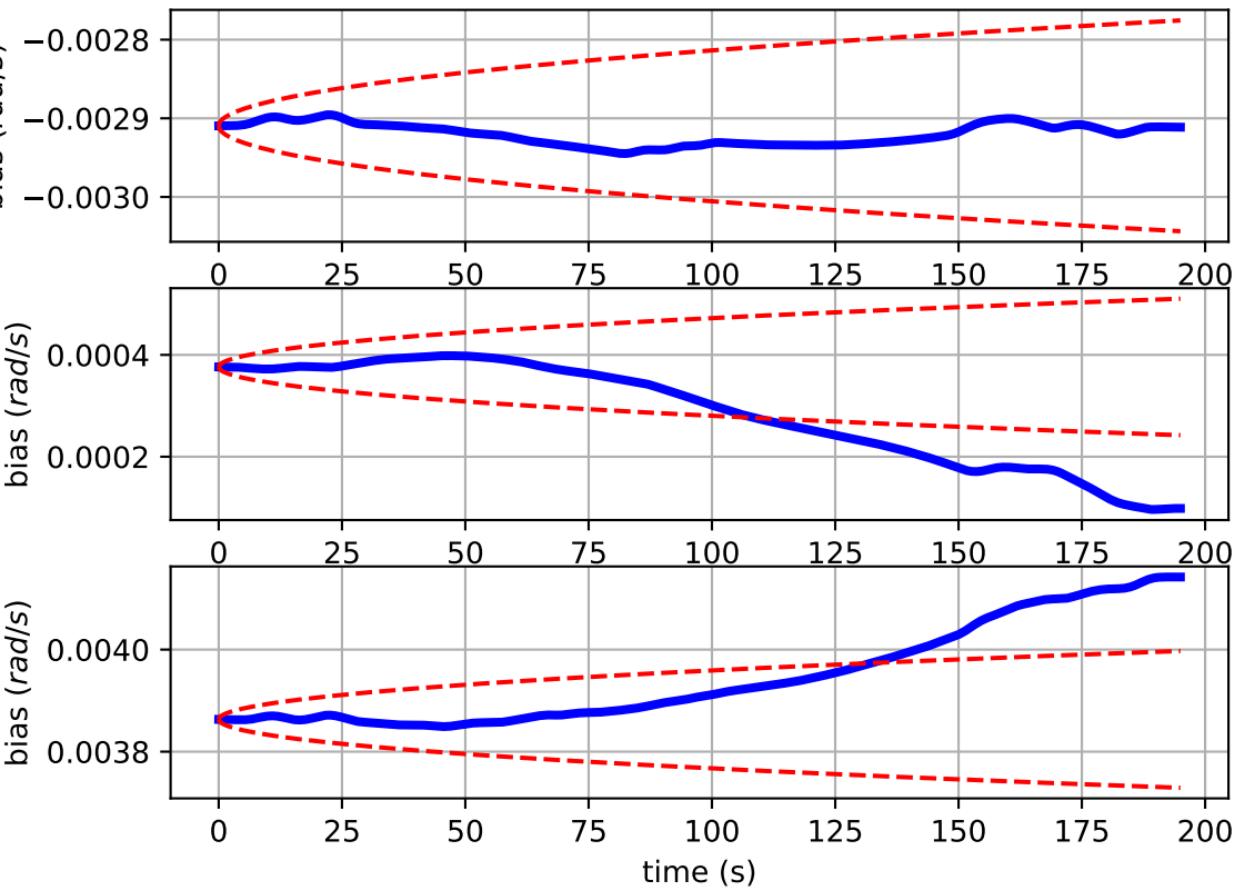
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

