

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 4.492187434134085, median 2.5569275261215245, std: 4.847705886493762

Gyroscope error (imu0): mean 5.613058786782433, median 4.76922507619585, std: 3.599310393043701

Accelerometer error (imu0): mean 9.104328937637709, median 6.476082046334234, std: 7.749138840806093

Residuals

Reprojection error (cam0) [px]: mean 4.492187434134085, median 2.5569275261215245, std: 4.847705886493762

Gyroscope error (imu0) [rad/s]: mean 0.13462956311080157, median 0.11439009762217081, std:

0.08632968299863693

Accelerometer error (imu0) [m/s^2]: mean 0.24064244944577542, median 0.17117354360946913, std:
0.20482253711615406

Transformation (cam0):

T_ci: (imu0 to cam0):

[[-0.99974374 0.02193998 0.00557636 0.01853838]
[0.01367227 -0.78153293 0.62371415 0.09231159]
[0.01804238 -0.62347808 -0.78163262 -0.39277786]
[0. 0. 0. 1.]]]

T_ic: (cam0 to imu0):

[[-0.99974374 0.01367227 0.01804238 -0.01270909]
[0.02193998 -0.78153293 -0.62347808 -0.17315057]
[0.00557636 0.62371415 -0.78163262 -0.36468741]
[0. 0. 0. 1.]]]

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

-0.0660073858651273

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

[0.09327404 -6.03607219 7.72823106]

Calibration configuration

cam0

Camera model: pinhole

Focal length: [653.4220818891049, 646.9388794125374]

Principal point: [260.19675418213643, 259.4653326146887]

Distortion model: radtan

Distortion coefficients: [0.0, 0.0, 0.0, 0.0]

Type: aprilgrid

Tags:

Rows: 6

Cols: 6

Size: 0.025 [m]

Spacing 0.0075 [m]

IMU configuration

IMU0:

Model: calibrated

Update rate: 200.0

Accelerometer:

Noise density: 0.001869

Noise density (discrete): 0.026431651480753146

Random walk: 0.00045

Gyroscope:

Noise density: 0.001696

Noise density (discrete): 0.023985062017847694

Random walk: 1.939e-05

T_ib (imu0 to imu0)

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

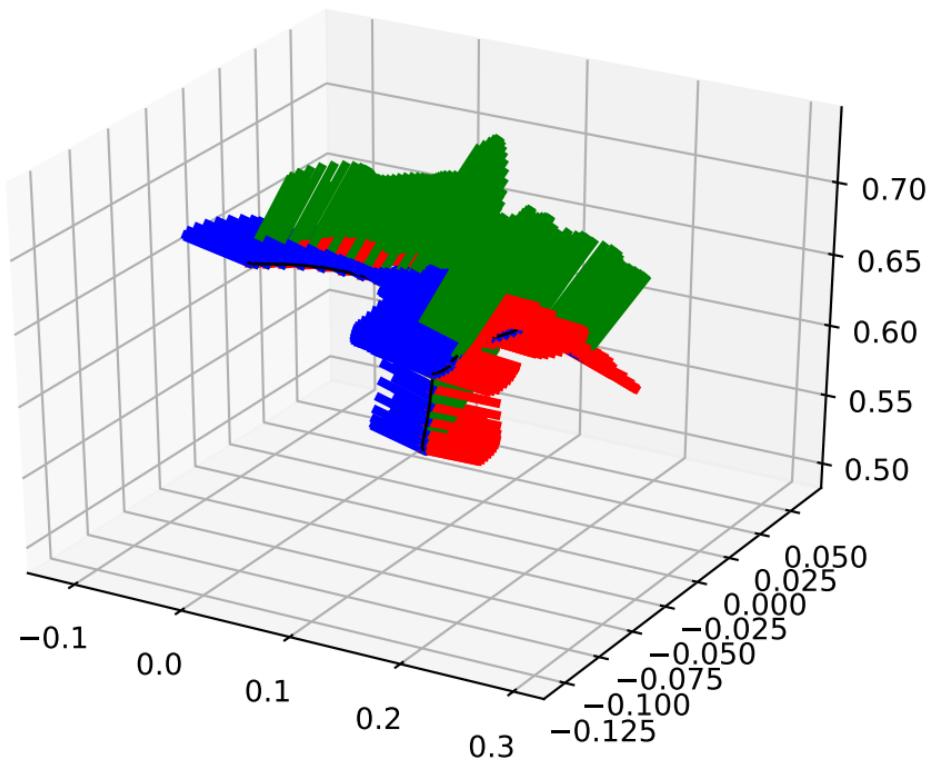
[0. 1. 0. 0.]

[0. 0. 1. 0.]

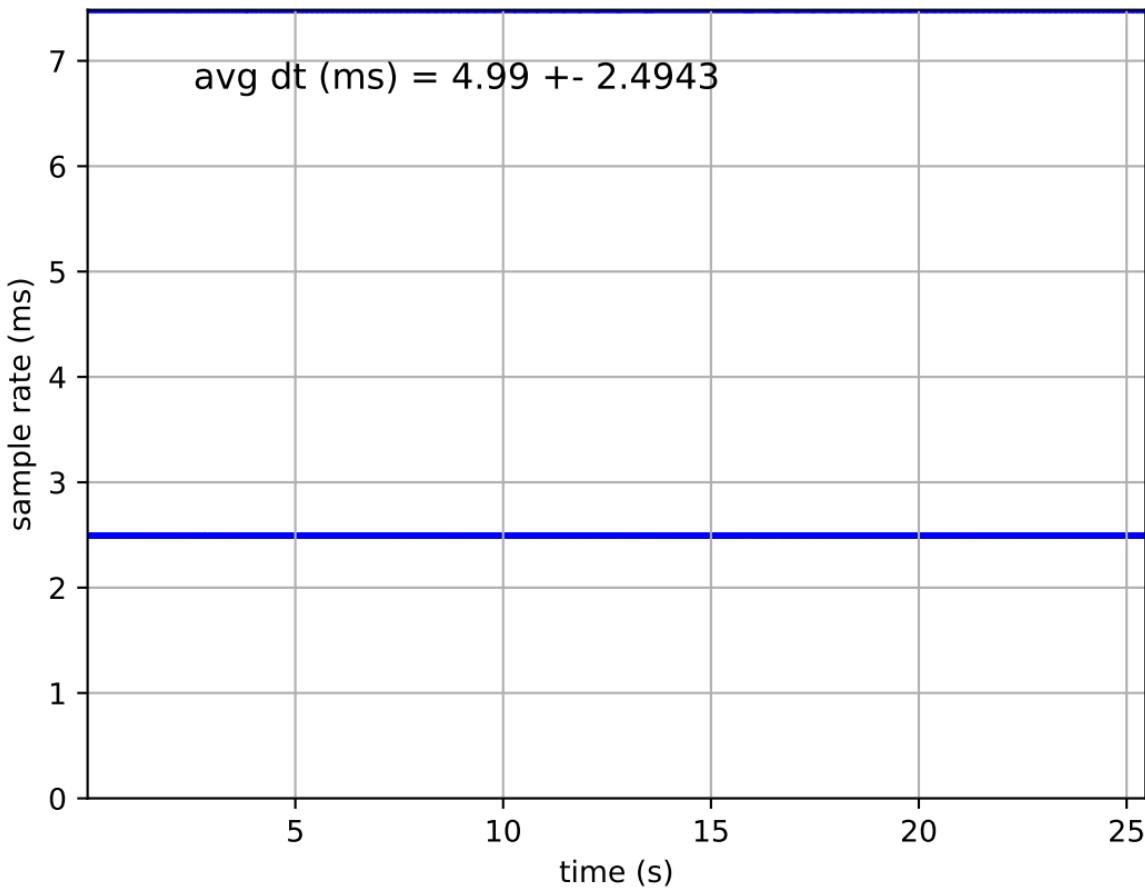
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

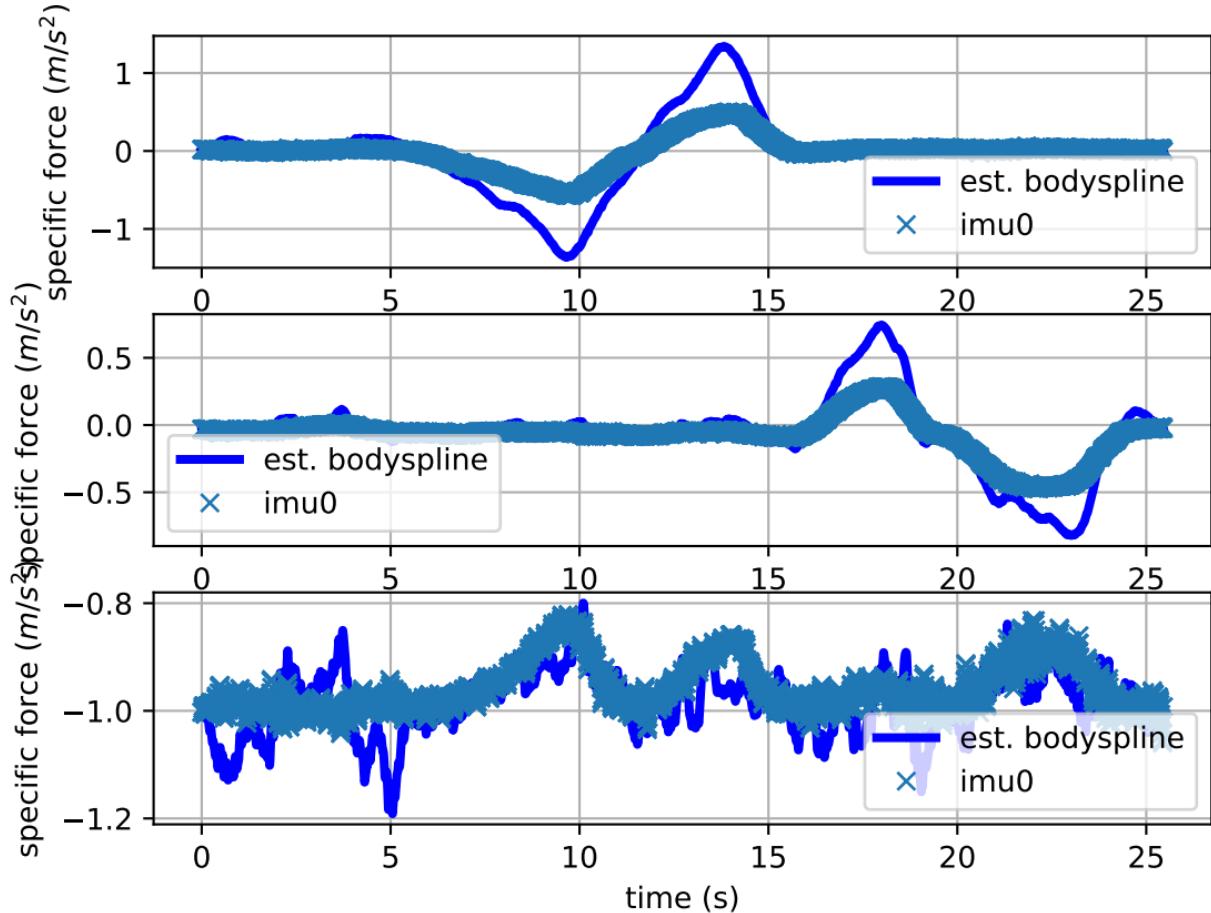
imu0: estimated poses



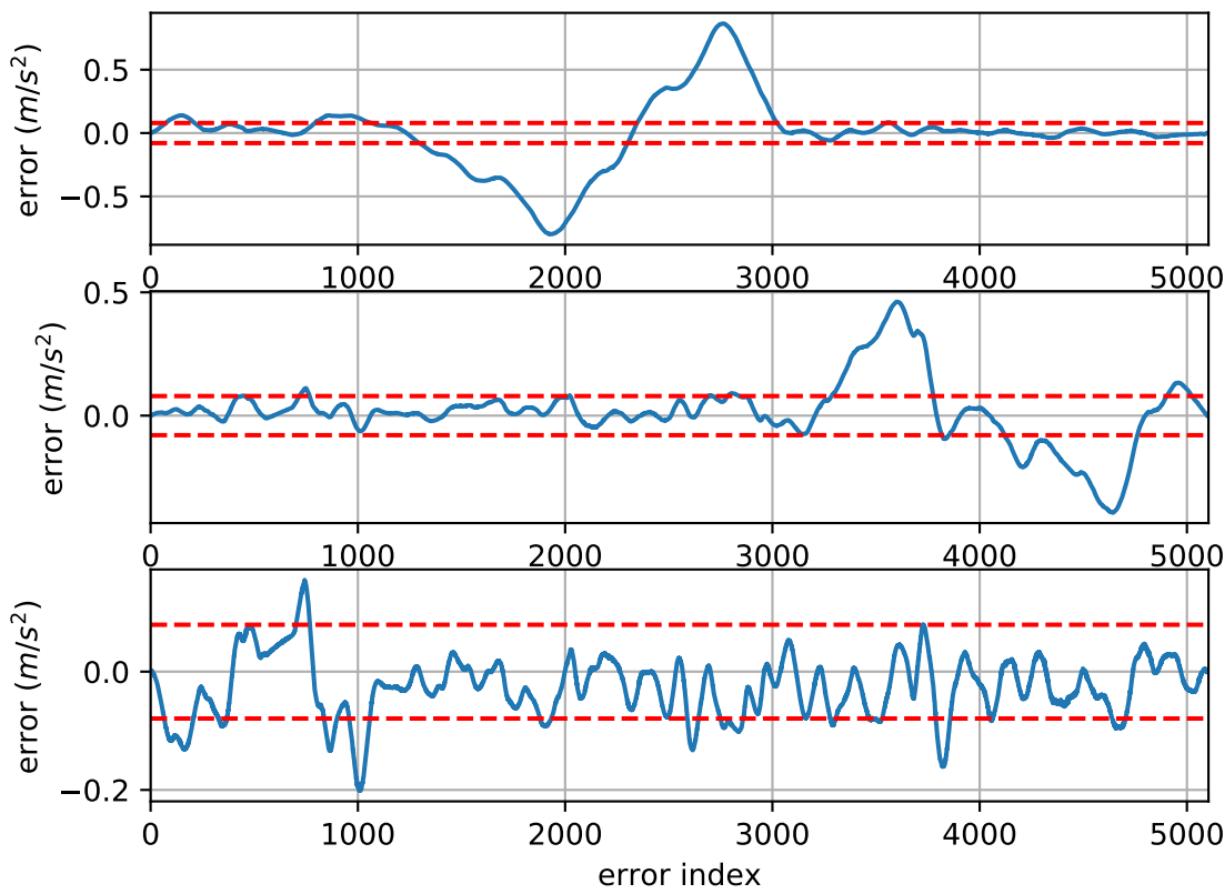
imu0: sample inertial rate



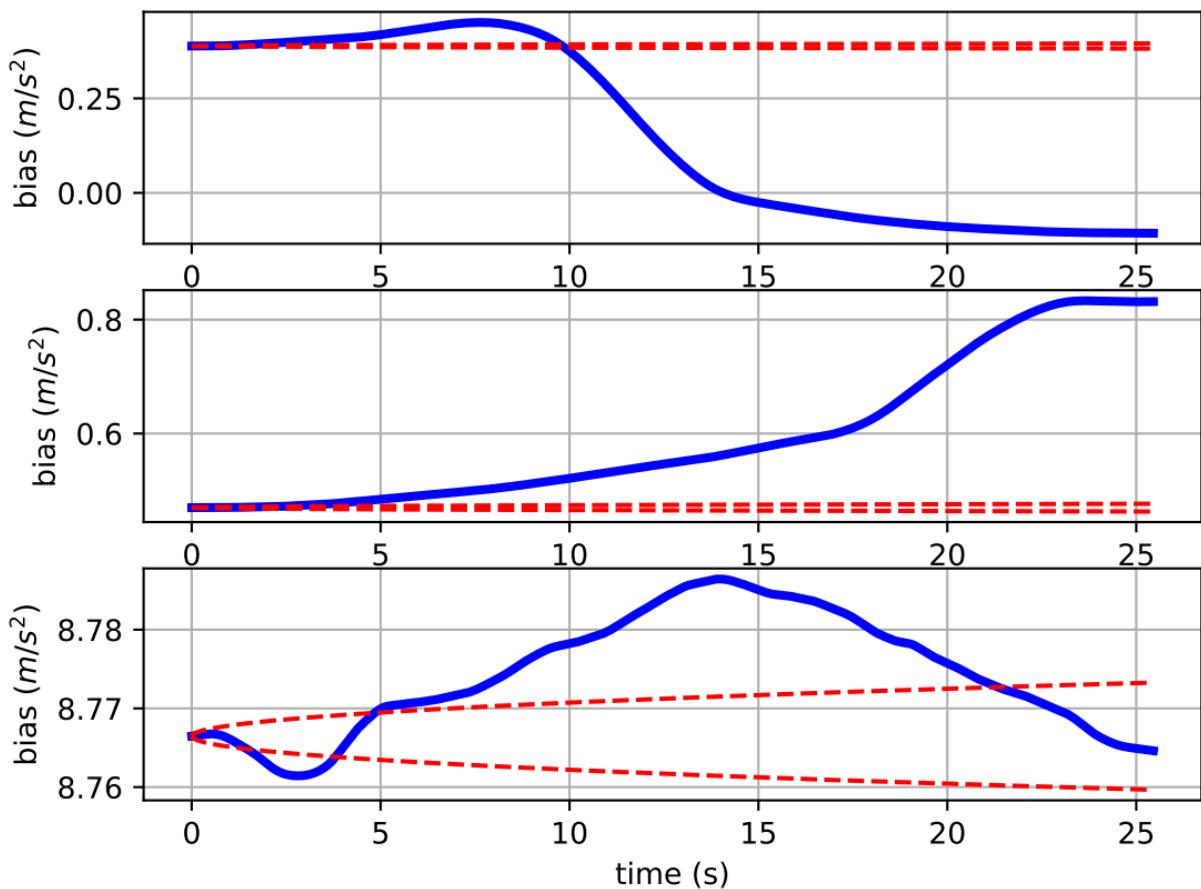
Comparison of predicted and measured specific force (imu0 frame)



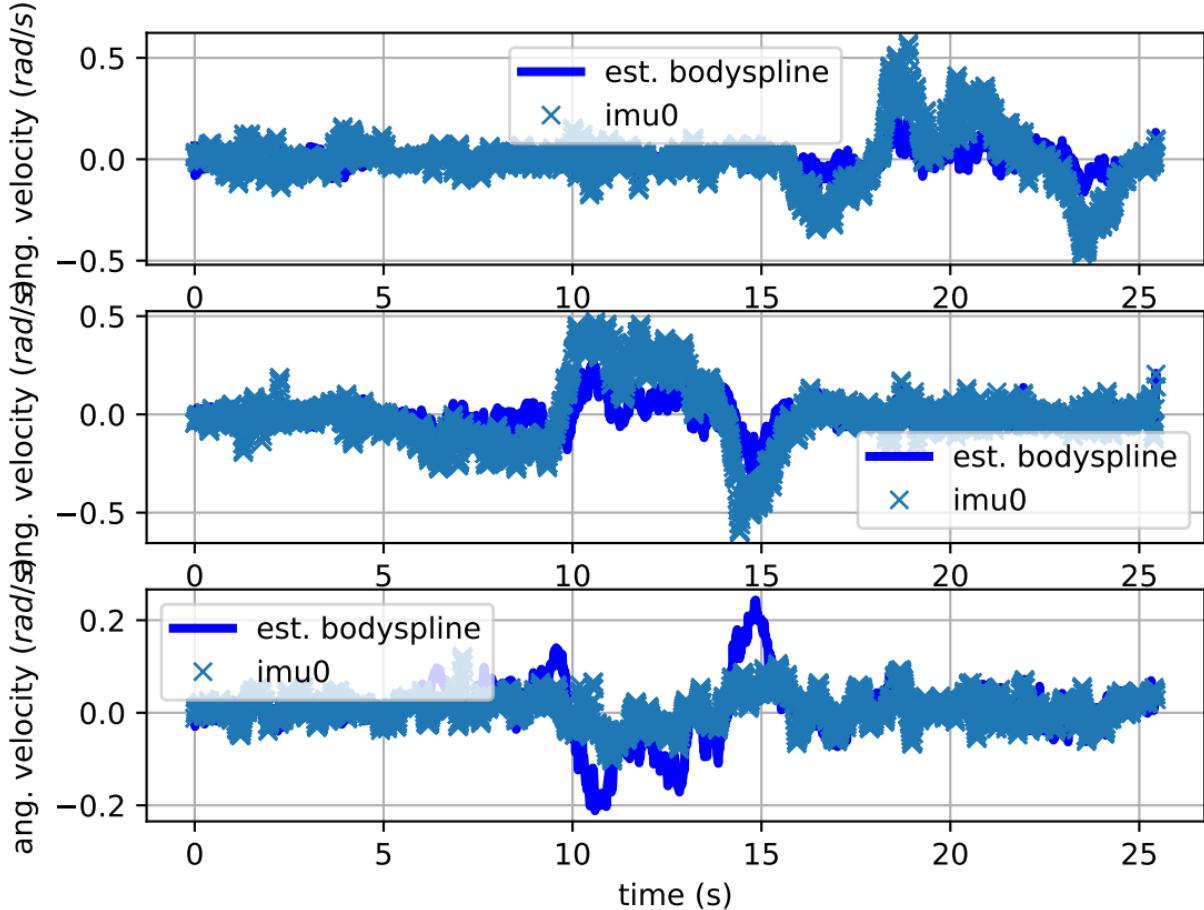
imu0: acceleration error



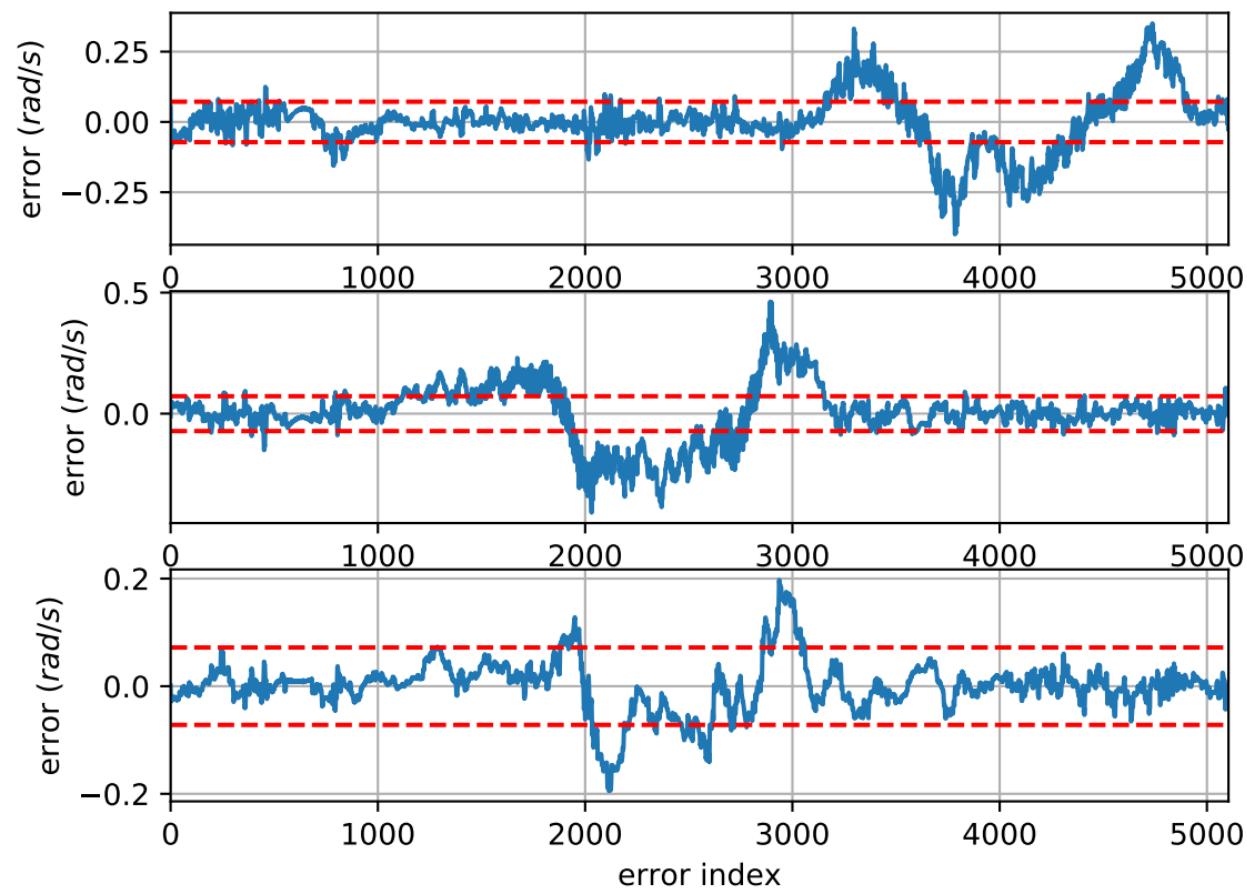
imu0: estimated accelerometer bias (imu frame)



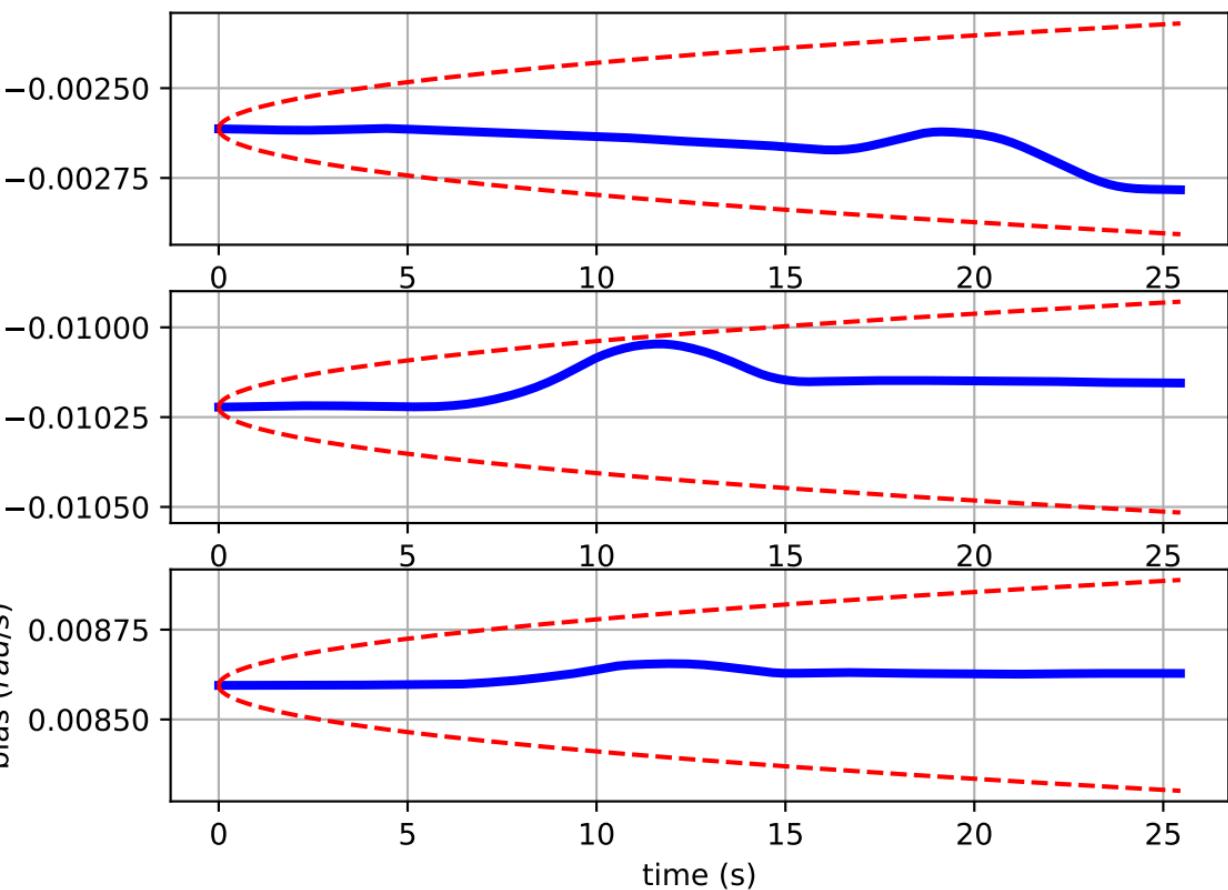
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

