

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.0464499961455, median 0.0431756820018, std: 0.0250070653171

Gyroscope error (imu0): mean 0.0774700126671, median 0.0536688180676, std: 0.0715029893483

Accelerometer error (imu0): mean 1.18431311539, median 0.270983844601, std: 1.83192342677

Residuals

Reprojection error (cam0) [px]: mean 0.0464499961455, median 0.0431756820018, std: 0.0250070653171

Gyroscope error (imu0) [rad/s]: mean 0.00547795712955, median 0.00379495851939, std: 0.0050560248

Accelerometer error (imu0) [m/s^2]: mean 0.167487166988, median 0.0383229028218, std: 0.2590730955

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.99997785 0.00282129 0.0060278 -0.04131619]

[-0.00277009 0.99996017 -0.00848464 -0.00246375]

[-0.0060515 0.00846775 0.99994584 -0.00691993]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.99997785 -0.00277009 -0.0060515 0.04126658]

[0.00282129 0.99996017 0.00846775 0.00263882]

[0.0060278 -0.00848464 0.99994584 0.0071477]

[0. 0. 0. 1.]]

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

0.0012464283225943299

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

[9.80461559 -0.18796667 0.05103547]

Calibration configuration

Camera model: pinhole
Focal length: [468.2527687453535, 468.3265694180005]
Principal point: [364.91196913276707, 215.81303741968622]
Distortion model: equidistant
Distortion coefficients: [0.011135829319036753, -0.05338166866546771, 0.15329931633590166, -0.1346
Type: checkerboard
Rows
 Count: 7
 Distance: 0.07 [m]
Cols
 Count: 6
 Distance: 0.07 [m]

IMU configuration

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IMU0:

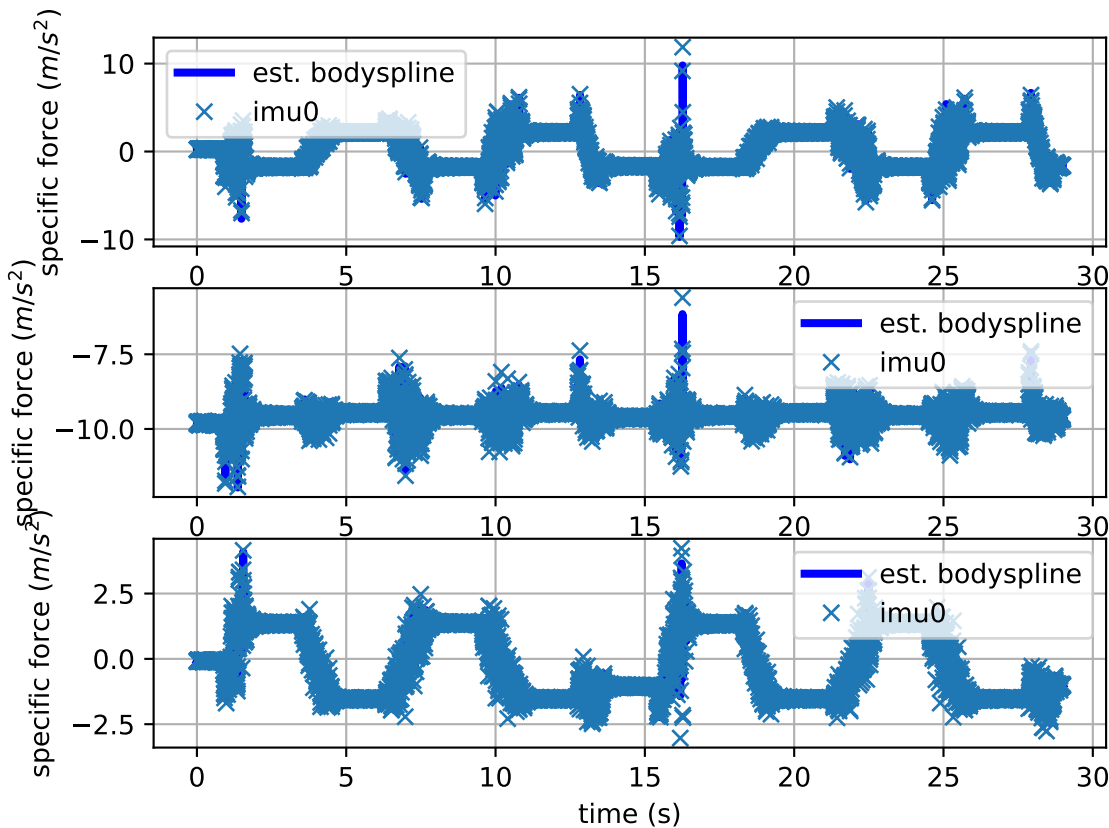
Model: calibrated
Update rate: 200.0
Accelerometer:
 Noise density: 0.01
 Noise density (discrete): 0.141421356237
 Random walk: 0.0002
Gyroscope:
 Noise density: 0.005
 Noise density (discrete): 0.0707106781187
 Random walk: 4e-06

T_i_b

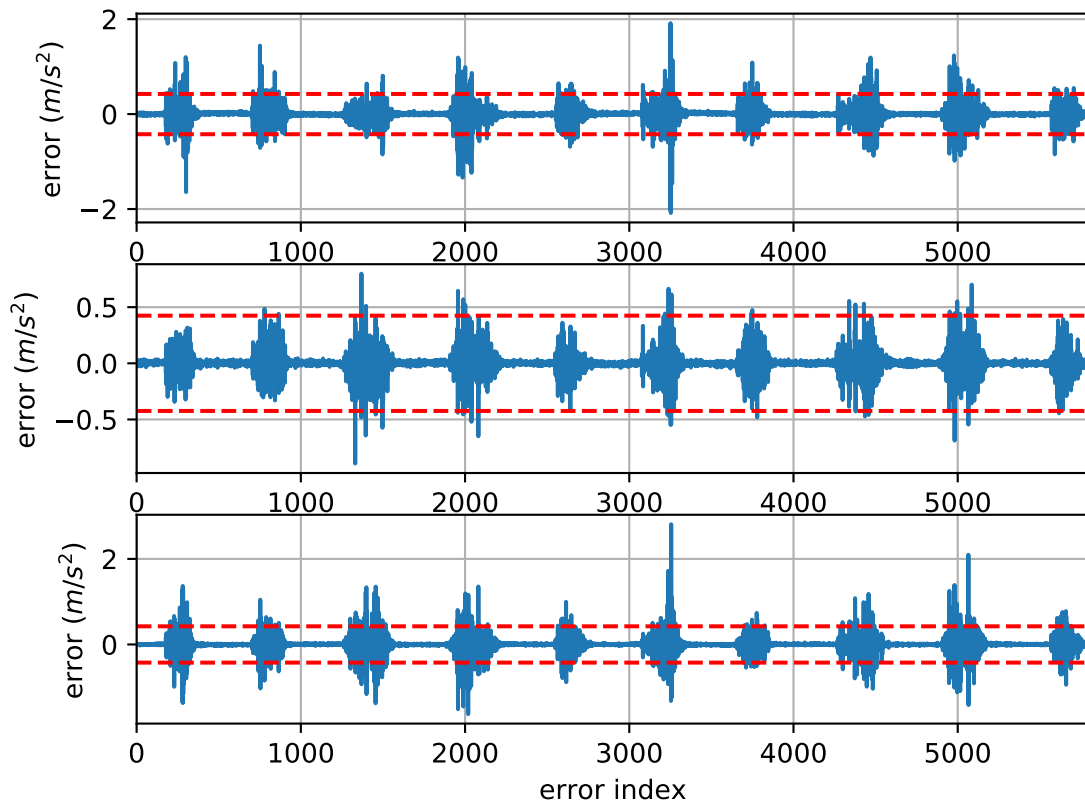
[[1. 0. 0. 0.]
[0. 1. 0. 0.]
[0. 0. 1. 0.]
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

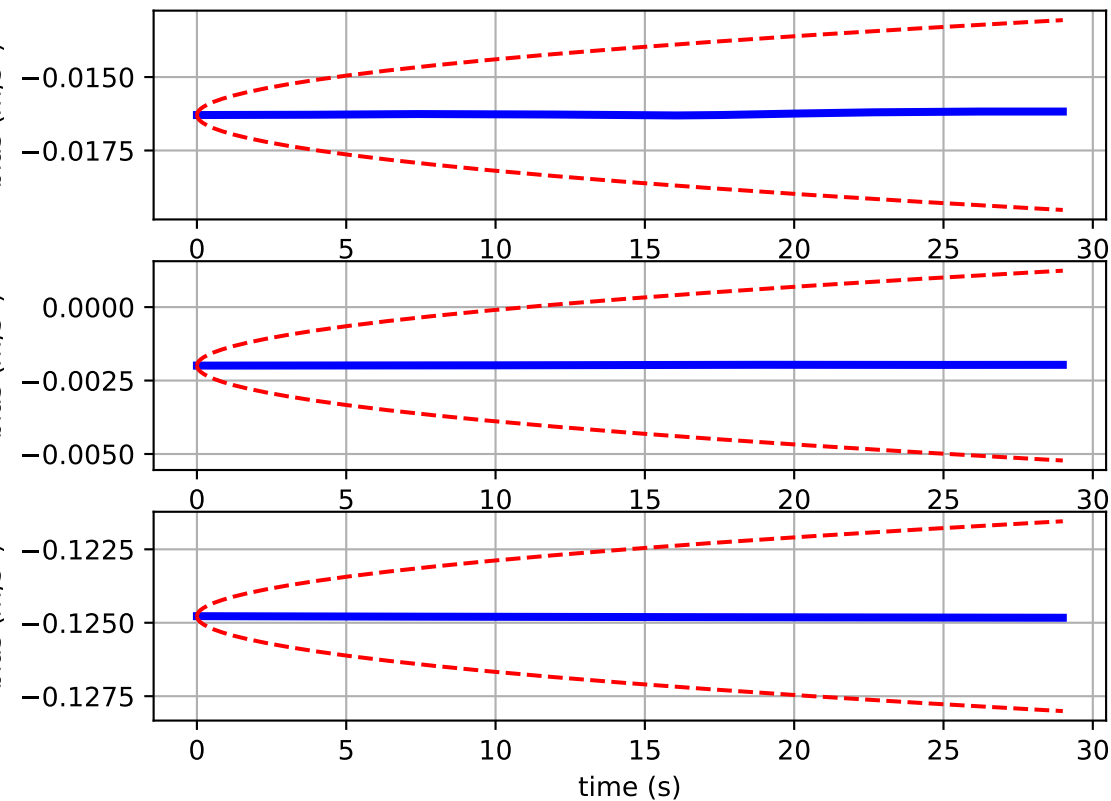
Comparison of predicted and measured specific force (imu0 frame)



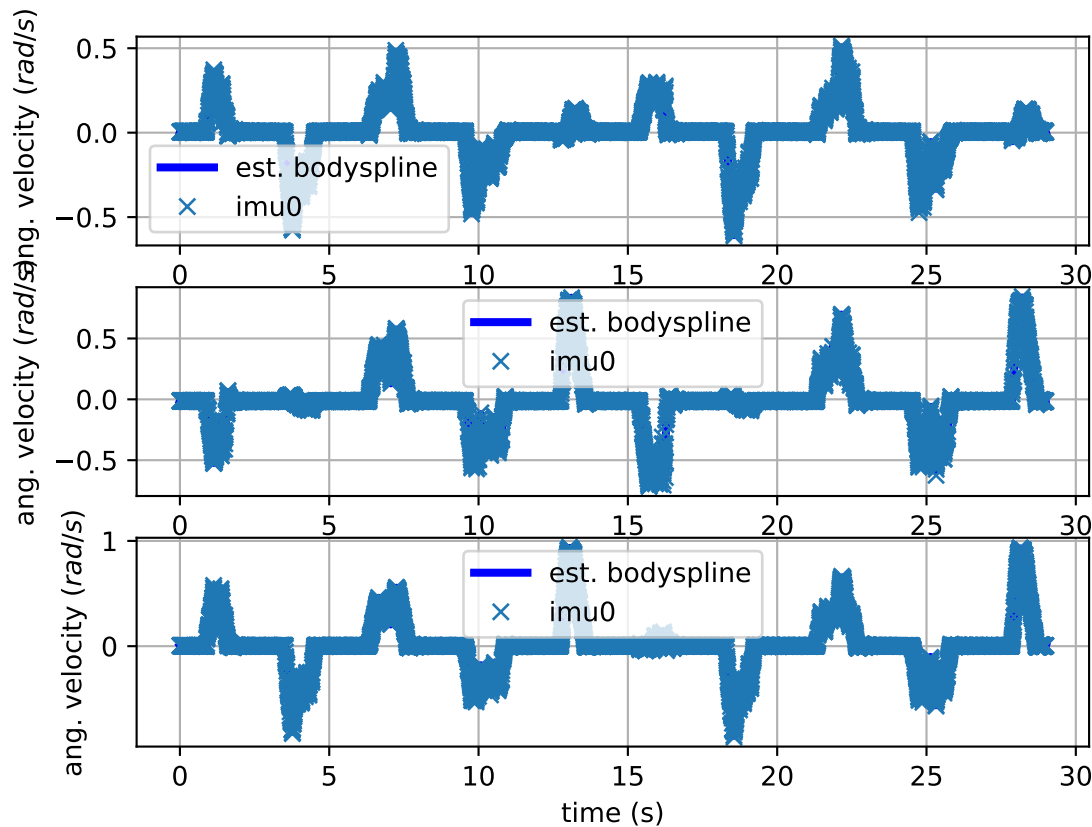
imu0: acceleration error



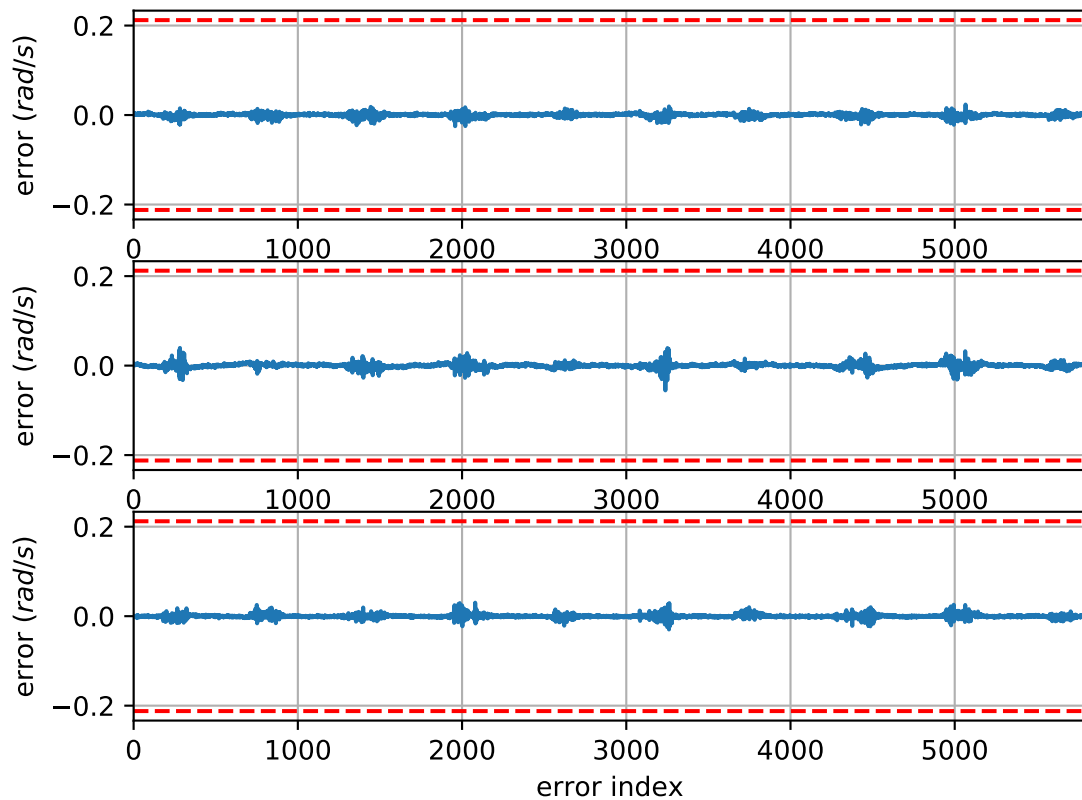
imu0: estimated accelerometer bias (imu frame)



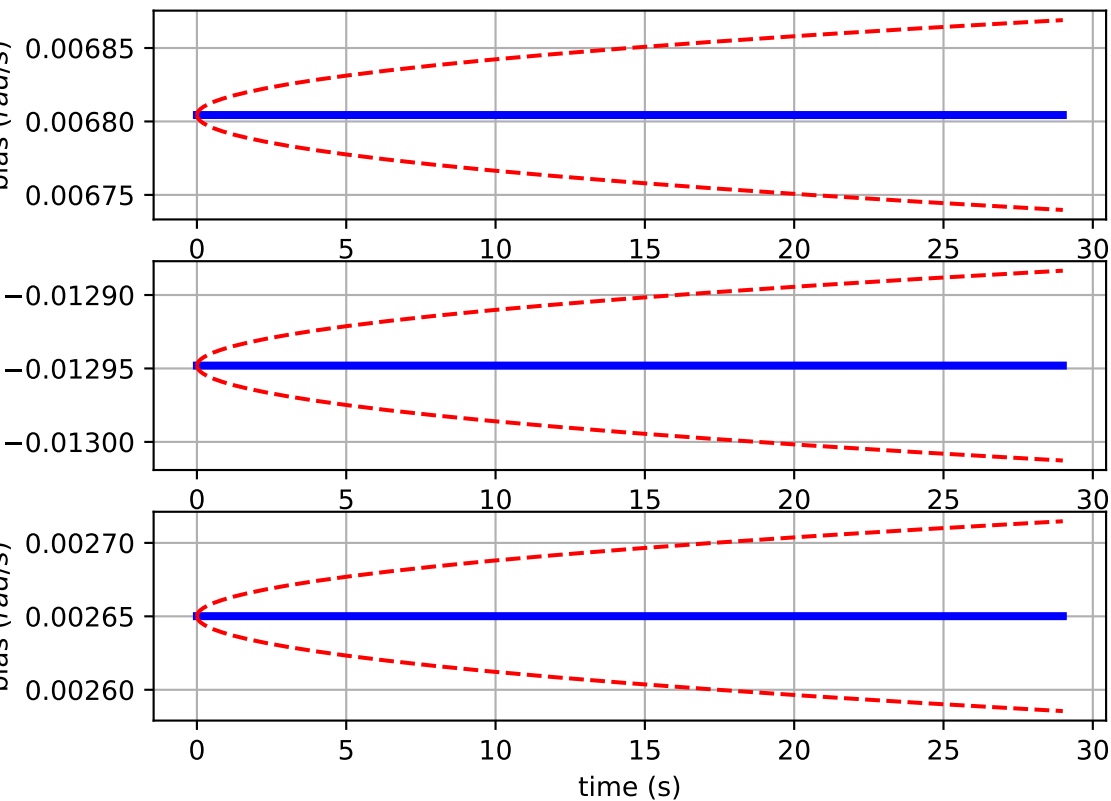
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

