

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.0479081944641, median 0.0437491551522, std: 0.0270269376046

Gyroscope error (imu0): mean 0.118826689156, median 0.0693809588756, std: 0.127451636807

Accelerometer error (imu0): mean 2.20624521925, median 0.815326399425, std: 3.08460690975

Residuals

Reprojection error (cam0) [px]: mean 0.0479081944641, median 0.0437491551522, std: 0.0270269376046

Gyroscope error (imu0) [rad/s]: mean 0.00840231576884, median 0.00490597465062, std: 0.0090121916

Accelerometer error (imu0) [m/s²]: mean 0.312010191099, median 0.115304565183, std: 0.43622929263

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.99997641 0.00096966 0.00679925 -0.04134574]

[-0.00090643 0.99995637 -0.00929752 -0.00666392]

[-0.00680797 0.00929114 0.99993366 -0.00632811]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.99997641 -0.00090643 -0.00680797 0.04129564]

[0.00096966 0.99995637 0.00929114 0.00676252]

[0.00679925 -0.00929752 0.99993366 0.00654686]

[0. 0. 0. 1.]]

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

0.0011860565697835947

Gravity vector in target coords: [m/s²]

[9.80405468 -0.21407571 0.05573505]

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:

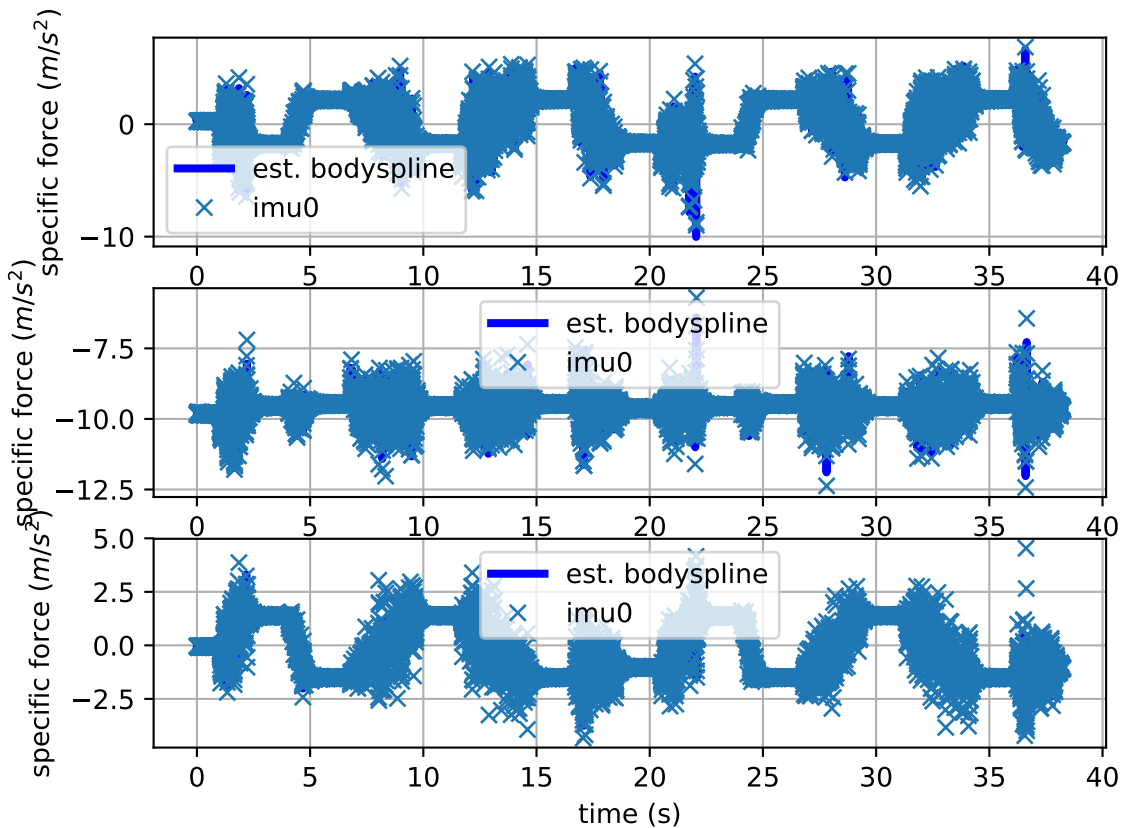
Model: calibrated
Update rate: 200.0
Accelerometer:
 Noise density: 0.01
 Noise density (discrete): 0.141421356237
 Random walk: 0.0002
Gyroscope:
 Noise density: 0.005
 Noise density (discrete): 0.0707106781187
 Random walk: 4e-06

T_i_b

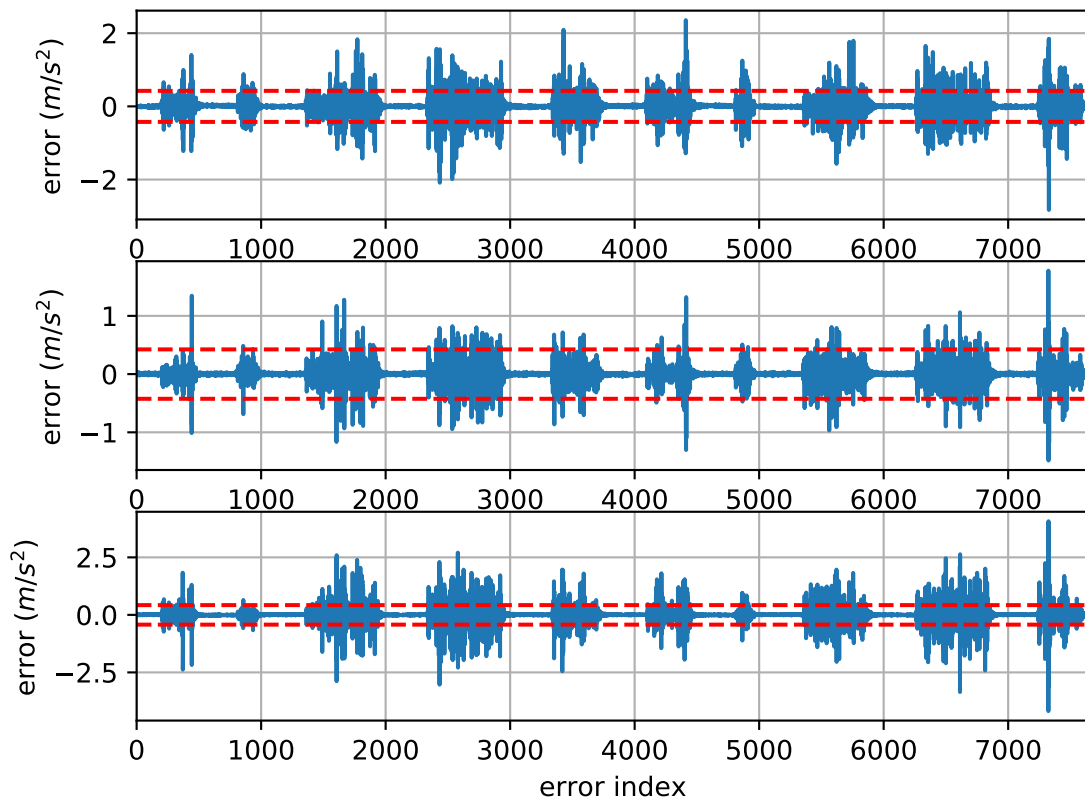
[[1. 0. 0. 0.]
[0. 1. 0. 0.]
[0. 0. 1. 0.]
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

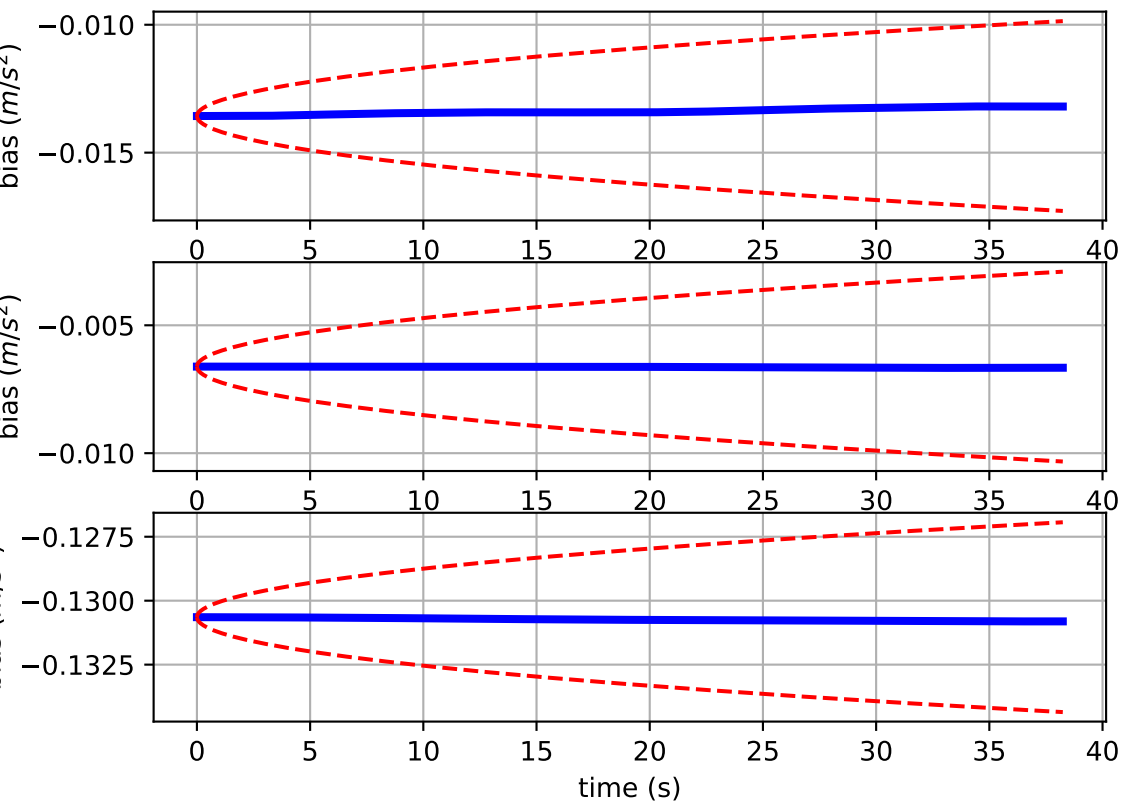
Comparison of predicted and measured specific force (imu0 frame)



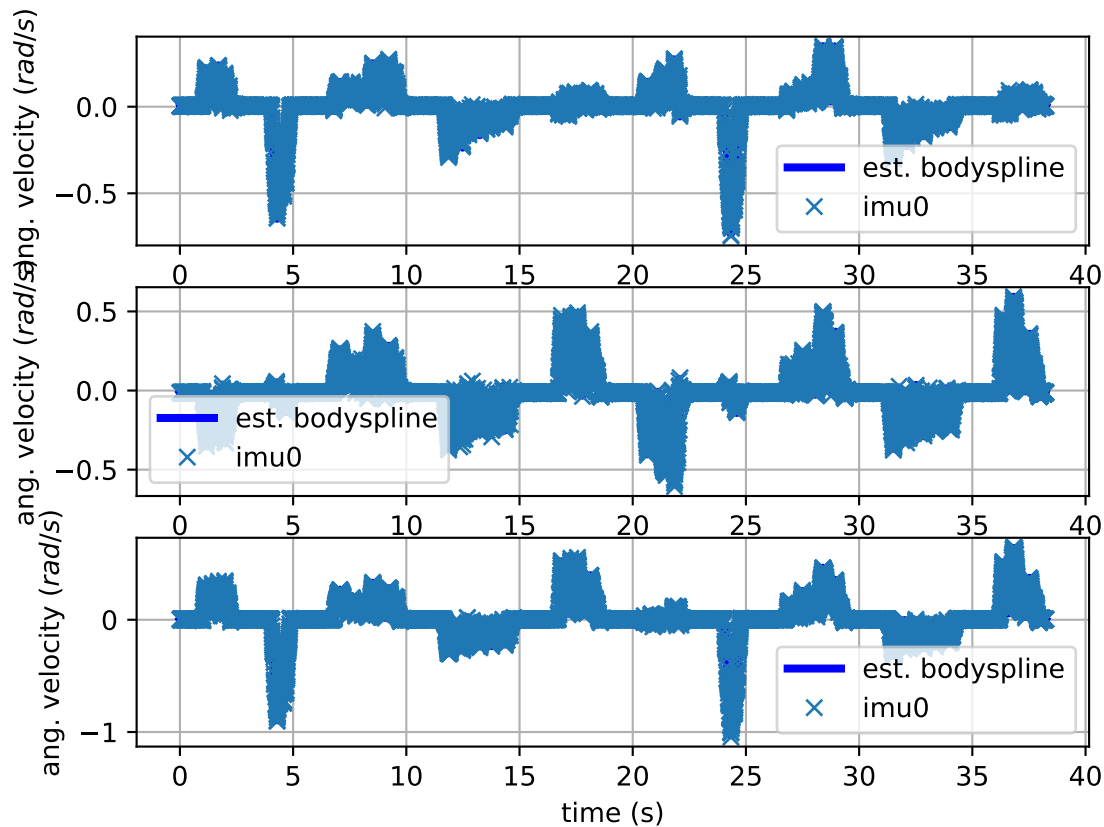
imu0: acceleration error



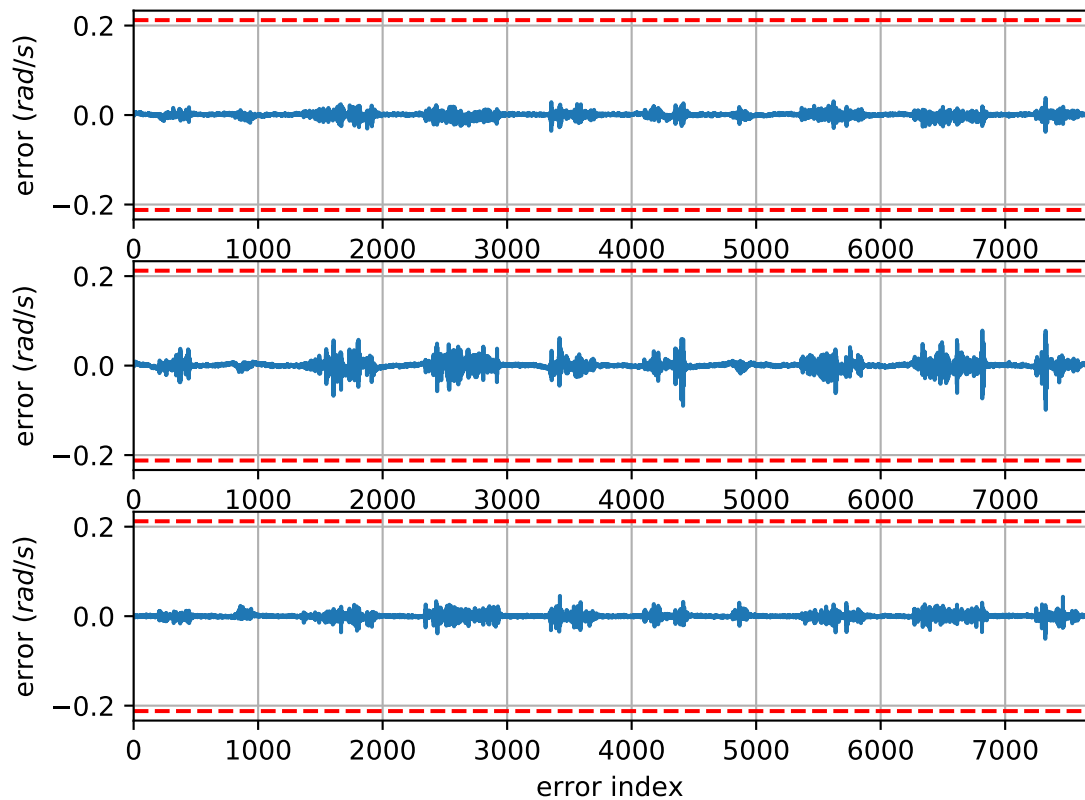
imu0: estimated accelerometer bias (imu frame)



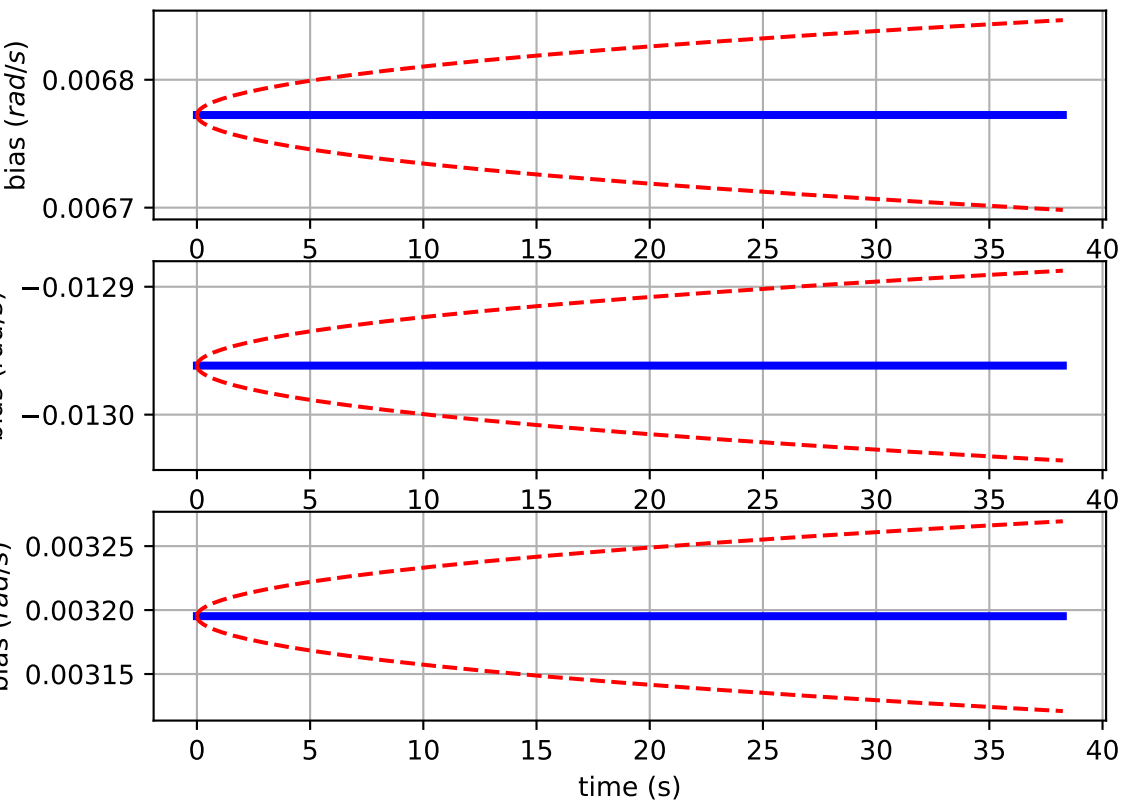
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

