

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 1.02617226024, median 0.857285897955, std: 0.692498599724

Gyroscope error (imu0): mean 1.32573844922e-06, median 3.31881229013e-07, std: 5.63244344677e-07

Accelerometer error (imu0): mean 1.12977248485e-08, median 1.09875802556e-09, std: 6.2183012591e-09

Residuals

Reprojection error (cam0) [px]: mean 1.02617226024, median 0.857285897955, std: 0.692498599724

Gyroscope error (imu0) [rad/s]: mean 9.37438647524e-08, median 2.34675467583e-08, std: 3.982738955e-08

Accelerometer error (imu0) [m/s^2]: mean 1.59773957047e-09, median 1.55387850152e-10, std: 8.794005e-10

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.01396963 0.72179256 0.69196846 -0.00072793]

[-0.32318882 -0.65163067 0.68624081 0.00126556]

[0.94623139 -0.233223 0.22417225 -0.00051889]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.01396963 -0.32318882 0.94623139 0.00091017]

[0.72179256 -0.65163067 -0.233223 0.00122907]

[0.69196846 0.68624081 0.22417225 -0.00024845]

[0. 0. 0. 1.]]

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

0.0

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

[-5.38152774 -1.9253465 7.96872782]

Calibration configuration

Camera model: pinhole
Focal length: [2386.91181098933, 2383.114885655747]
Principal point: [1893.8276869584151, 970.4347200122446]
Distortion model: radtan
Distortion coefficients: [-0.0931514109173045, -2.93914590176803, -0.0008583365117760008, 0.000219]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.088 [m]
 Spacing 0.0264 [m]

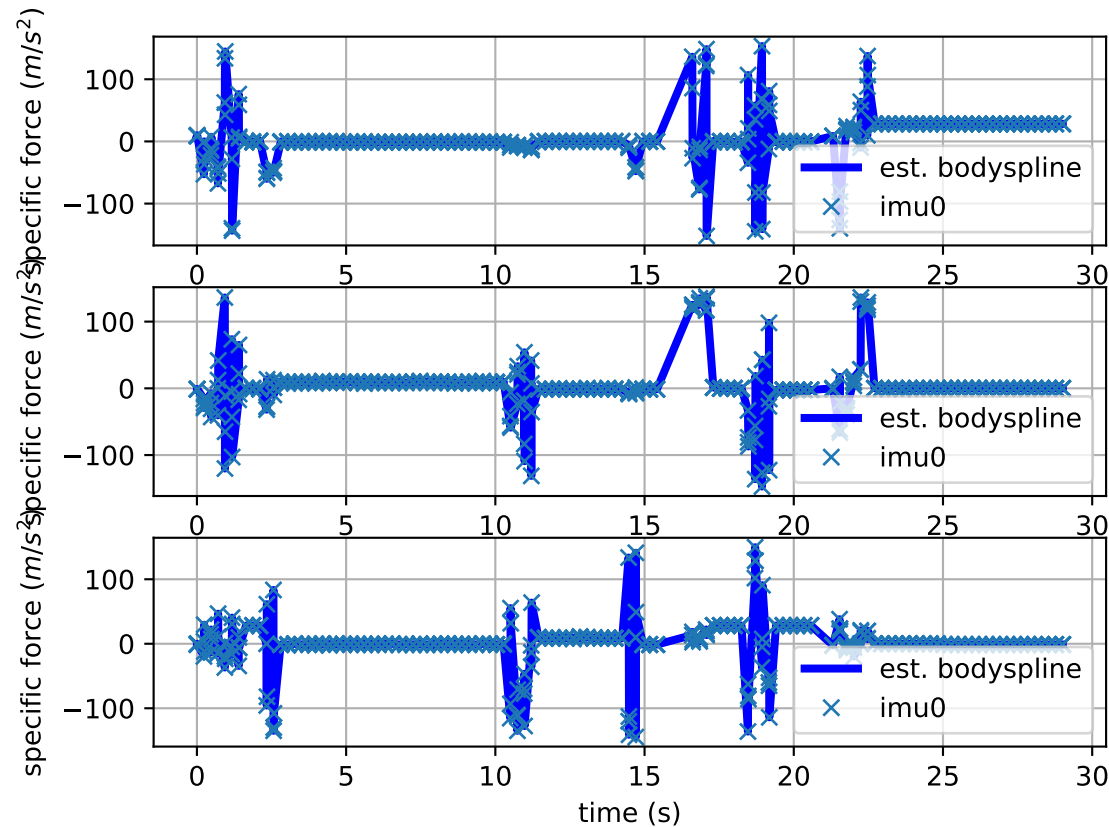
IMU configuration

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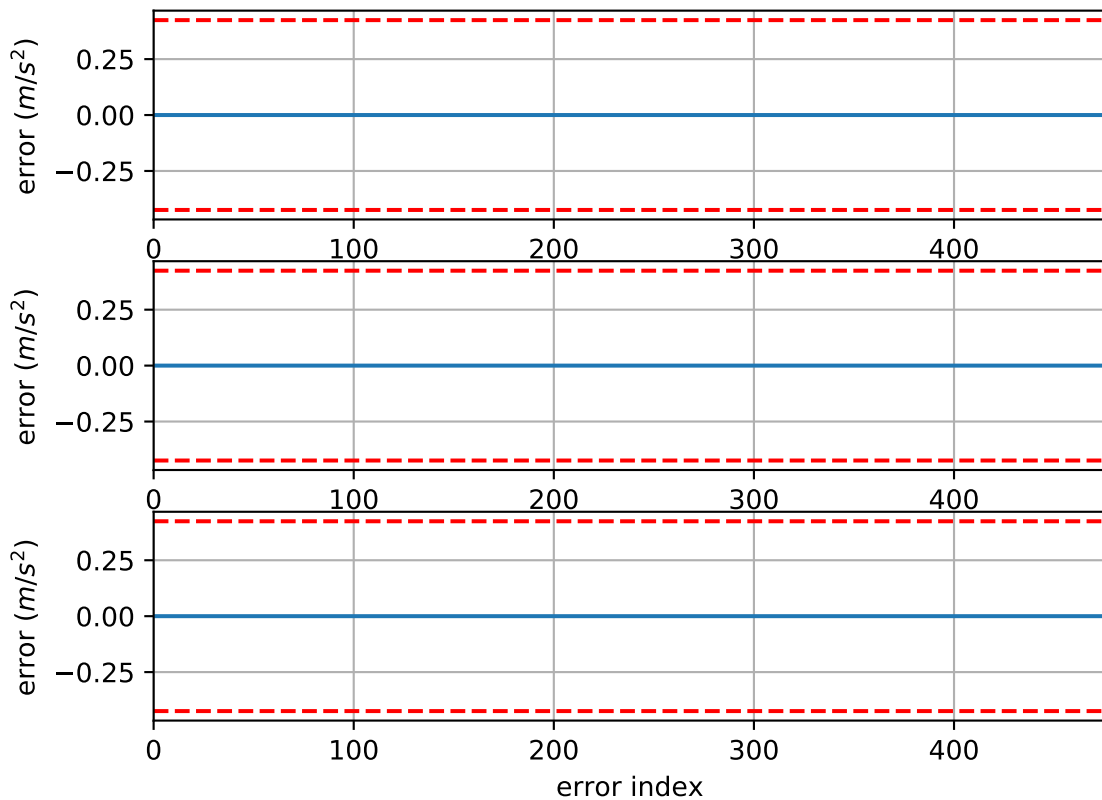
IMU0:

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]

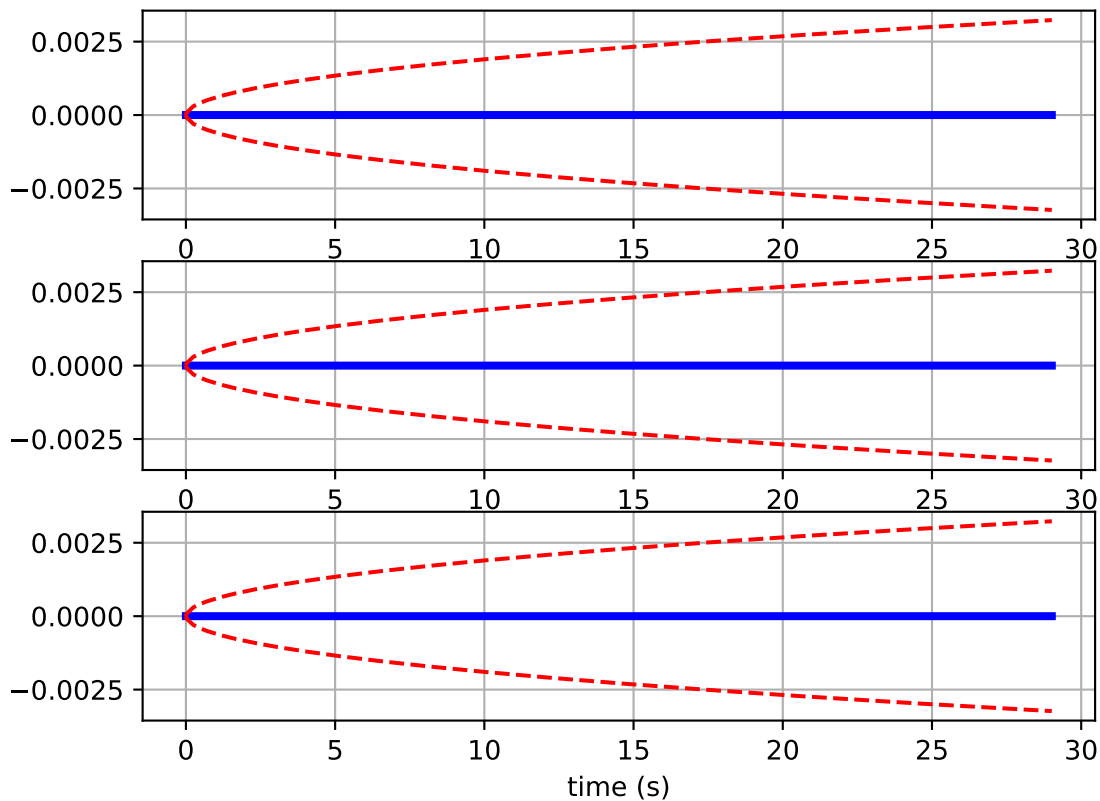
Comparison of predicted and measured specific force (imu0 frame)



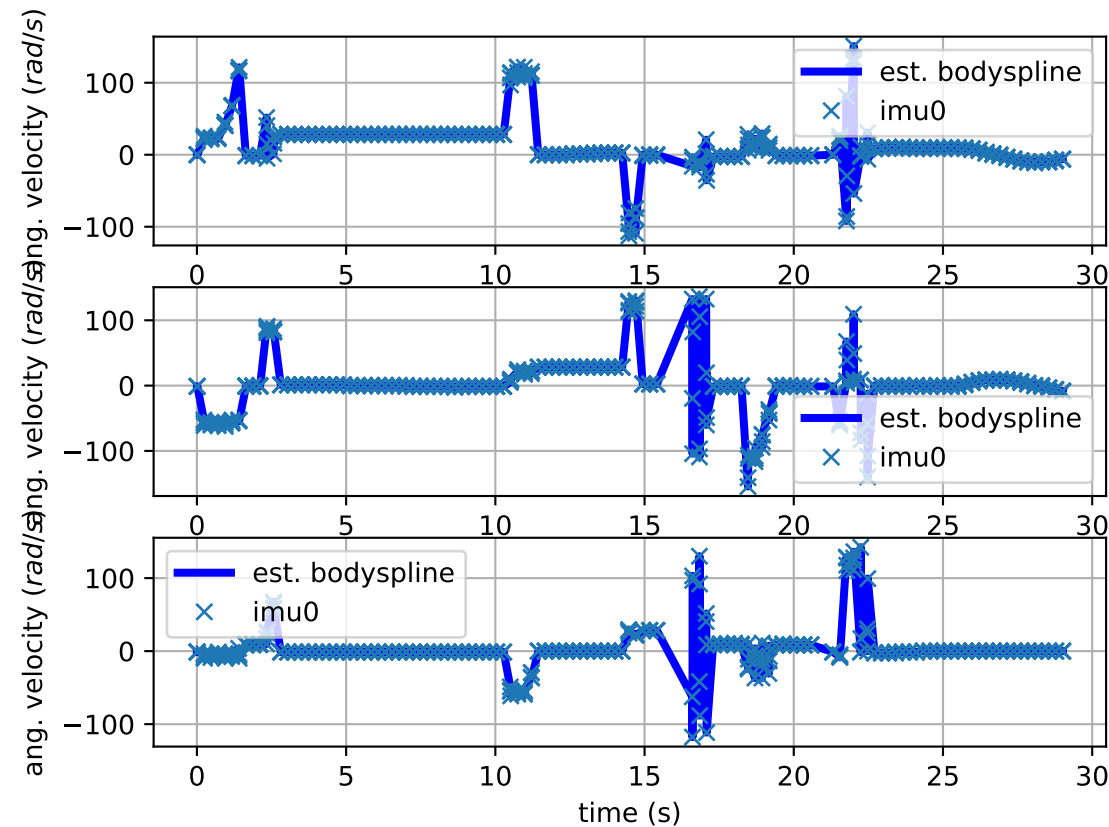
imu0: acceleration error



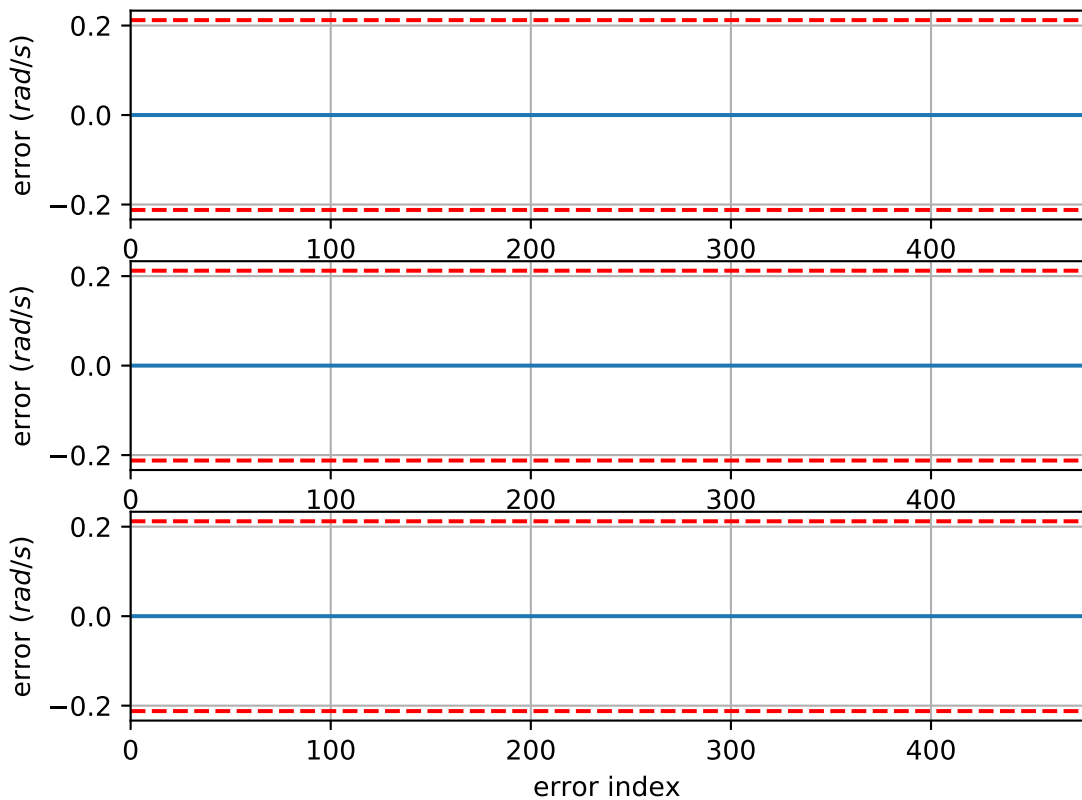
imu0: estimated accelerometer bias (imu frame)



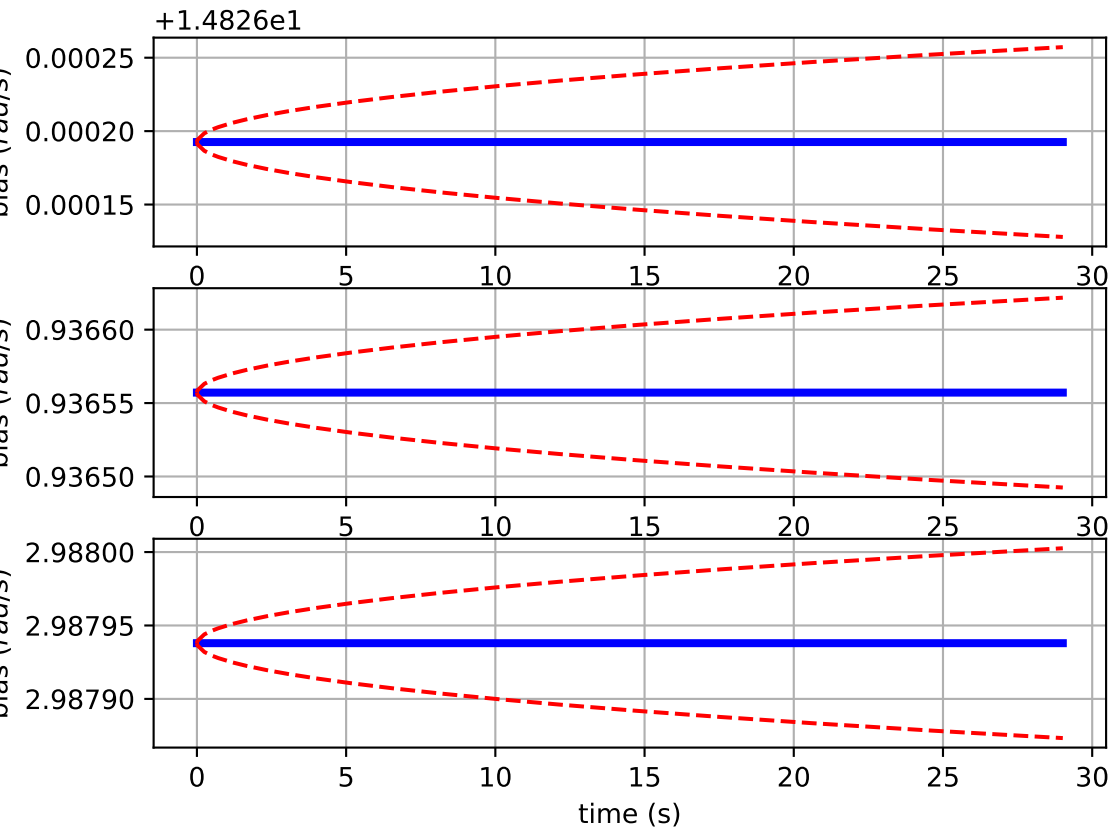
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

