

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.755907651323, median 0.65076585941, std: 0.546529953775
Gyroscope error (imu0): mean 0.884194023042, median 0.582156488211, std: 0.899067373525
Accelerometer error (imu0): mean 1.57974529398, median 1.19040365118, std: 1.58695749313

Residuals

Reprojection error (cam0) [px]: mean 0.755907651323, median 0.65076585941, std: 0.546529953775
Gyroscope error (imu0) [rad/s]: mean 0.530516413825, median 0.349293892927, std: 0.539440424115
Accelerometer error (imu0) [m/s²]: mean 0.0789872646991, median 0.0595201825589, std: 0.079347874

Transformation (cam0):

T_ci: (imu0 to cam0):

[[-0.02002943 0.99974576 0.01035531 -0.02372815]
[-0.99977726 -0.01995899 -0.0068612 -0.04809467]
[-0.00665278 -0.01049043 0.99992284 0.05062299]
[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[-0.02002943 -0.99977726 -0.00665278 -0.04822244]
[0.99974576 -0.01995899 -0.01049043 0.02329326]
[0.01035531 -0.0068612 0.99992284 -0.05070335]
[0. 0. 0. 1.]]

timeshift cam0 to imu0: [s] (t_imu = t_cam + shift)
-0.1388960629466736

Gravity vector in target coords: [m/s²]
[9.53322138 -0.05326538 -2.29853776]

Calibration configuration

Camera model: pinhole
Focal length: [1137.6778305387977, 1144.0919454590316]
Principal point: [996.3853260783424, 780.1023320702924]
Distortion model: radtan
Distortion coefficients: [-0.2884124212277216, 0.0953459294071787, 0.0008925309684333832, 5.555044
Type: aprilgrid
Tags:
 Rows: 7
 Cols: 6
 Size: 0.02 [m]
 Spacing 0.004 [m]

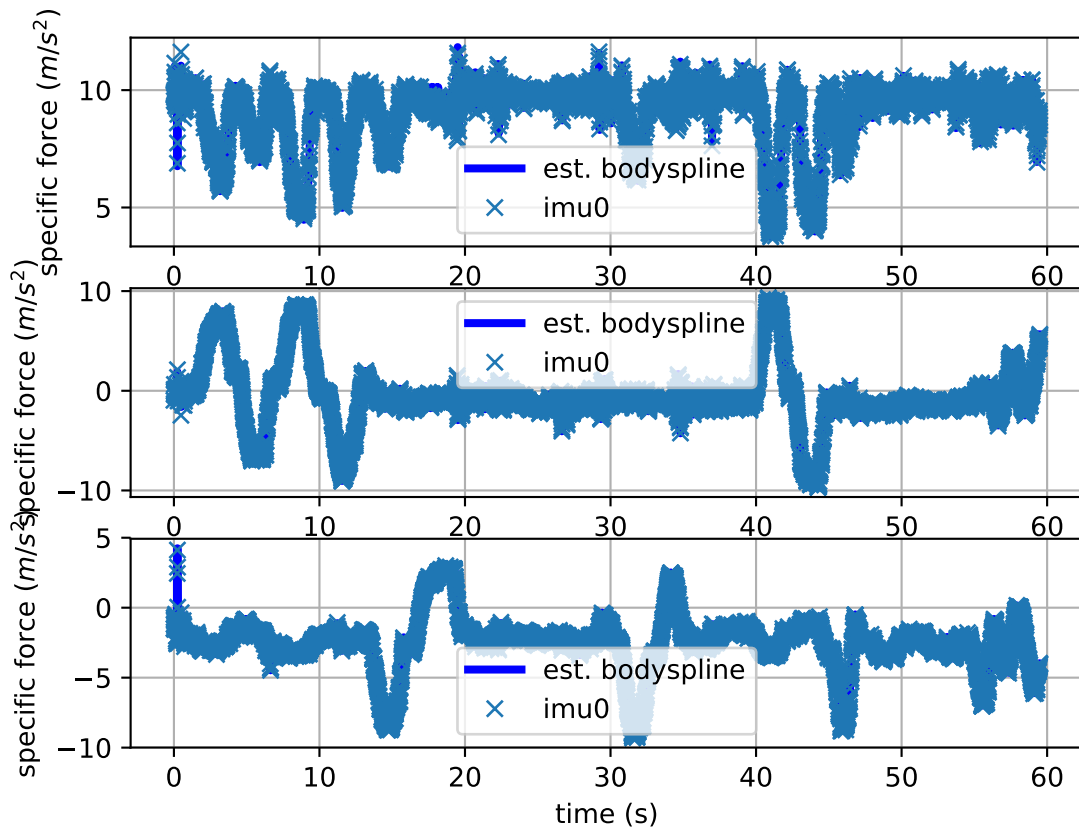
IMU configuration

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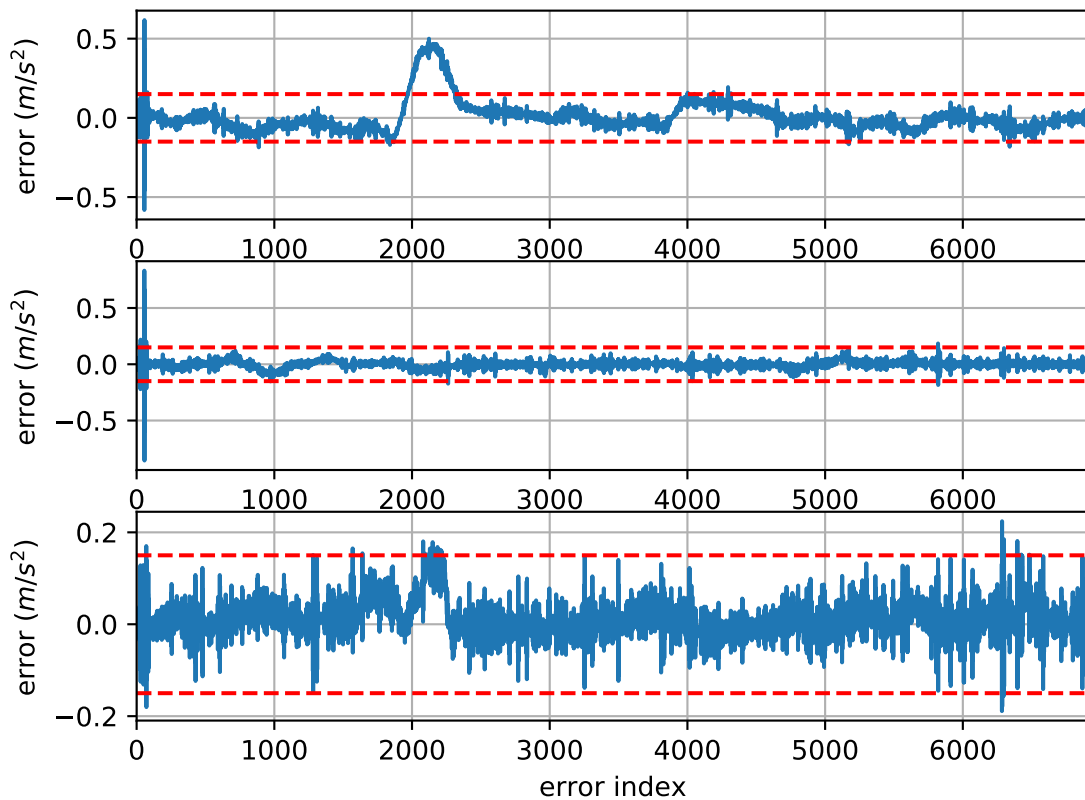
IMU0:

Model: calibrated
Update rate: 100.0
Accelerometer:
 Noise density: 0.005
 Noise density (discrete): 0.05
 Random walk: 0.0003
Gyroscope:
 Noise density: 0.06
 Noise density (discrete): 0.6
 Random walk: 0.0005
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]

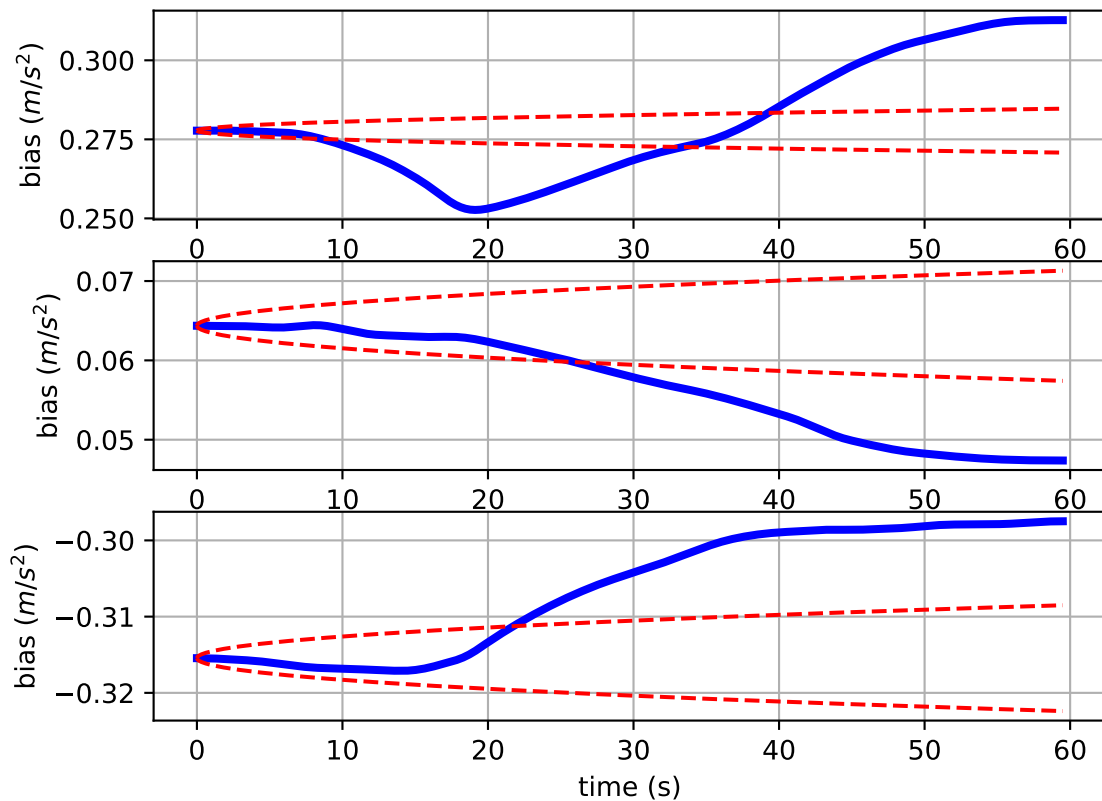
Comparison of predicted and measured specific force (imu0 frame)



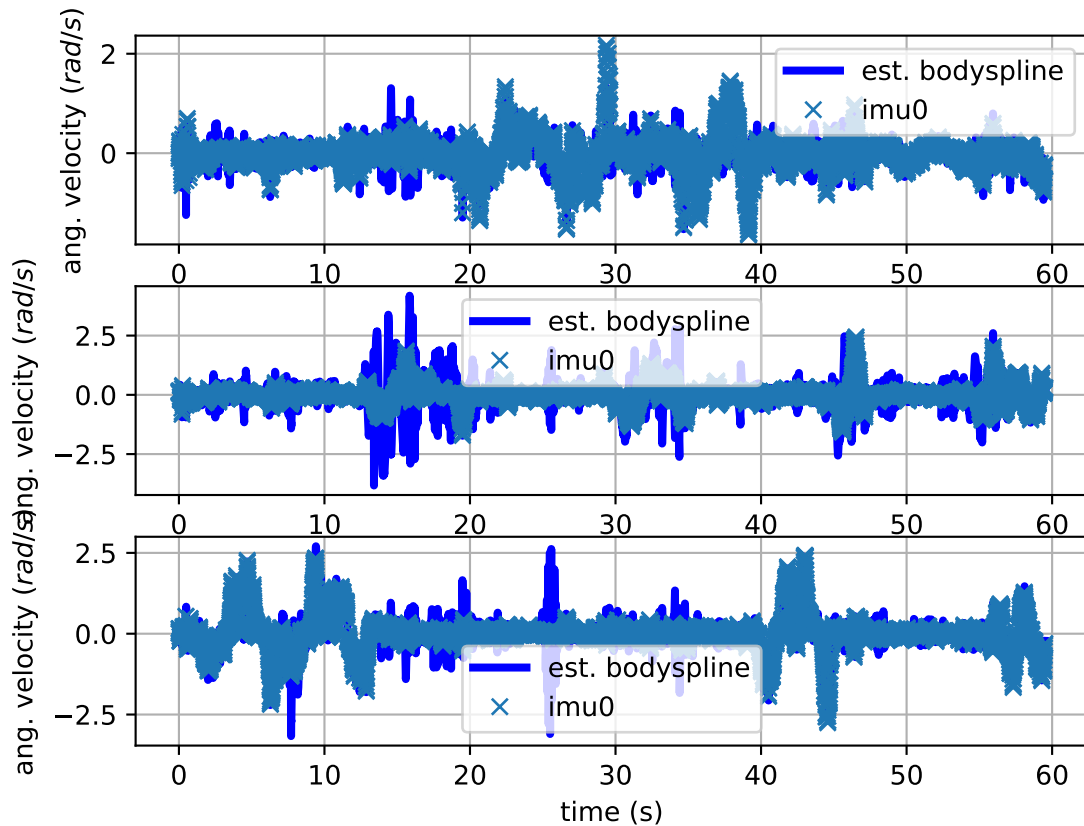
imu0: acceleration error



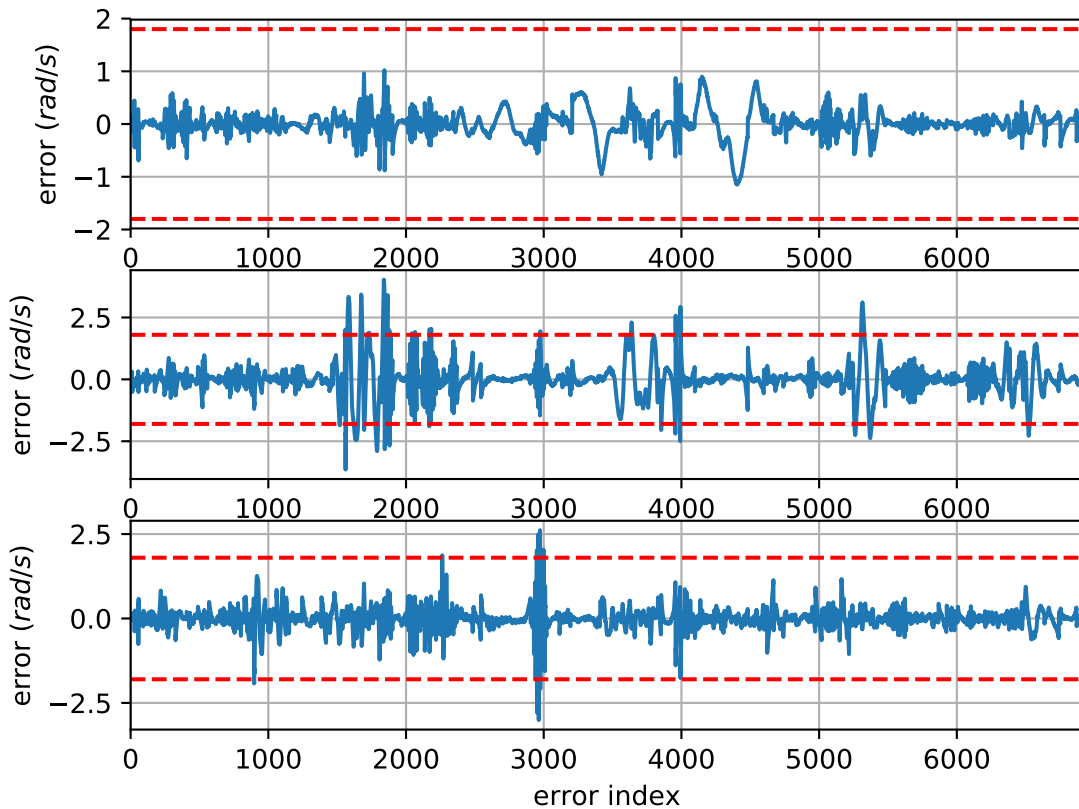
imu0: estimated accelerometer bias (imu frame)



Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)

