

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.300509905654, median 0.248693556594, std: 0.206812683298

Gyroscope error (imu0): mean 2.54780294473, median 2.13218488212, std: 2.05095300423

Accelerometer error (imu0): mean 3.91568340041, median 3.05600414748, std: 3.73572919956

Residuals

Reprojection error (cam0) [px]: mean 0.300509905654, median 0.248693556594, std: 0.206812683298

Gyroscope error (imu0) [rad/s]: mean 0.00343556721513, median 0.00287512992037, std: 0.0027655933

Accelerometer error (imu0) [m/s^2]: mean 0.0201873733153, median 0.0157552820976, std: 0.019259616

Transformation (cam0):

T_ci: (imu0 to cam0):

[[-0.00952026 -0.99981855 0.01649928 0.00080303]

[-0.00619296 -0.01644076 -0.99984566 -0.00104594]

[0.9999355 -0.00962097 -0.00603532 0.00023533]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[-0.00952026 -0.00619296 0.9999355 -0.00023415]

[-0.99981855 -0.01644076 -0.00962097 0.00078796]

[0.01649928 -0.99984566 -0.00603532 -0.00105761]

[0. 0. 0. 1.]]

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

0.04818850990686697

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

[-0.01367672 -9.79915415 -0.38054407]

Calibration configuration

Camera model: pinhole
Focal length: [7255.78496321, 7255.78496321]
Principal point: [1044.3998515, 660.57744351]
Distortion model: radtan
Distortion coefficients: [-0.028982185687907436, -0.6251005904992704, 0, 0]
Type: aprilgrid
Tags:
 Rows: 6
 Cols: 6
 Size: 0.088 [m]
 Spacing 0.0264 [m]

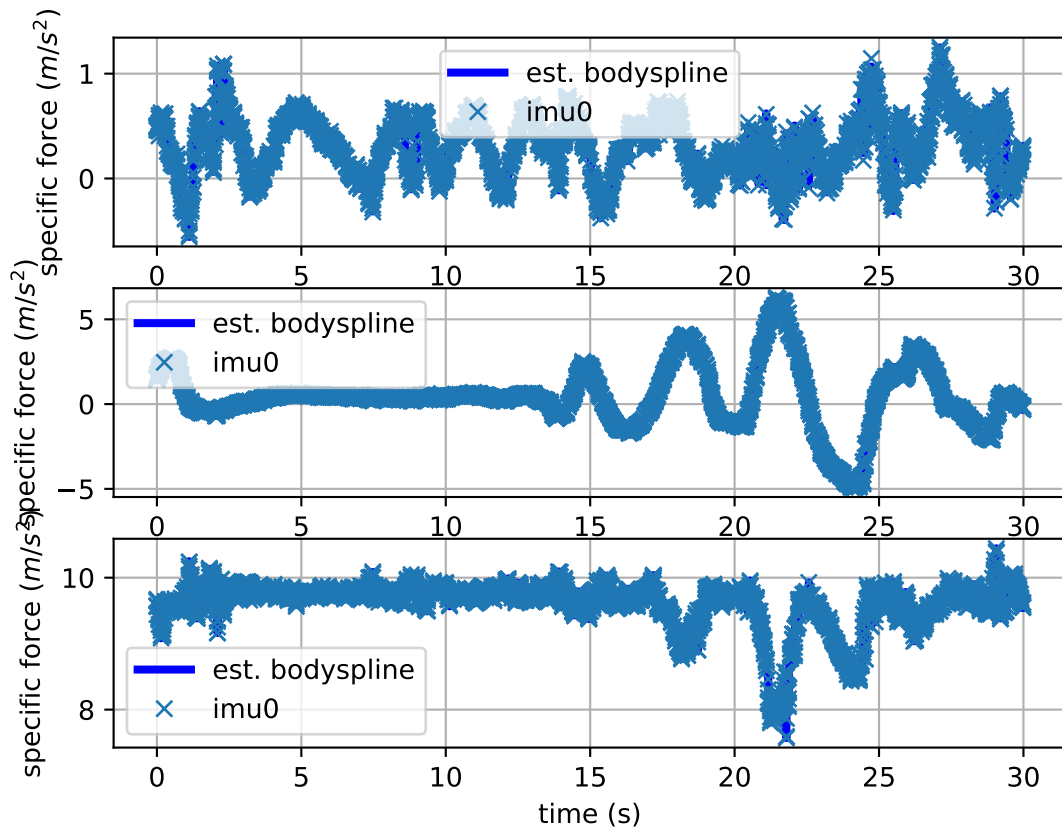
IMU configuration

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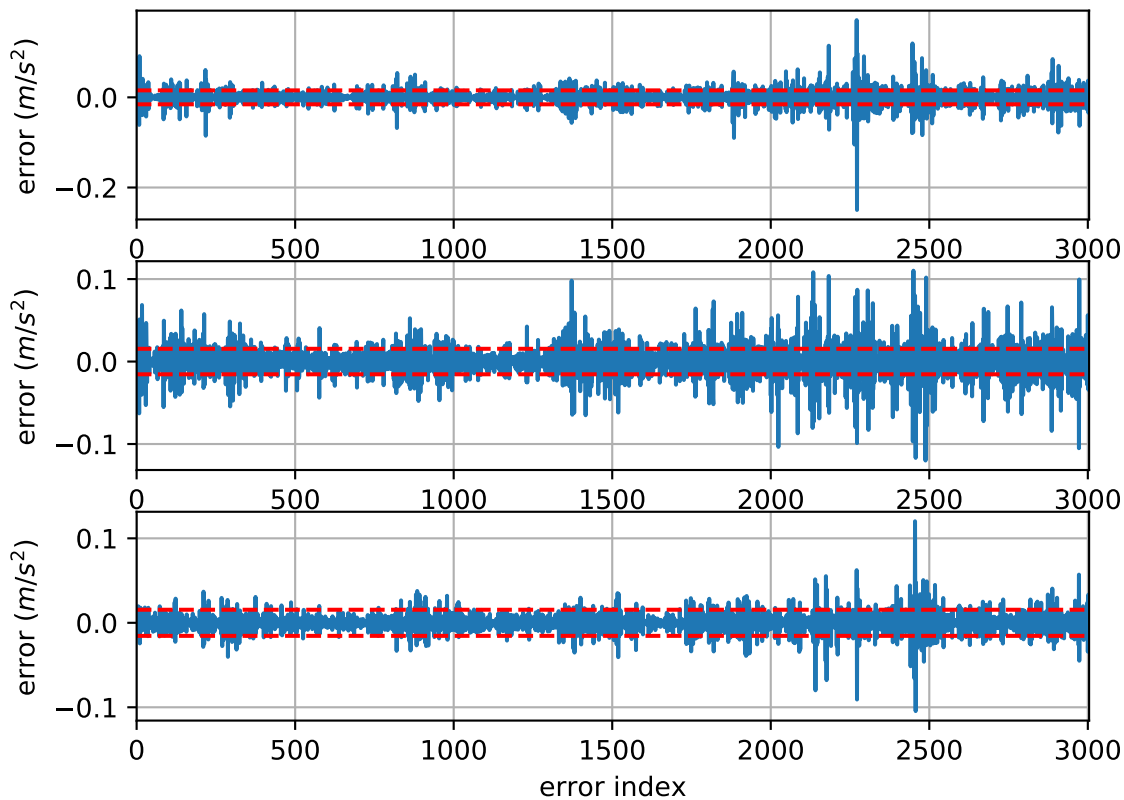
IMU0:

Model: calibrated
Update rate: 100.0
Accelerometer:
 Noise density: 0.000515551724974
 Noise density (discrete): 0.00515551724974
 Random walk: 8.81787033684e-05
Gyroscope:
 Noise density: 0.00013484430663
 Noise density (discrete): 0.0013484430663
 Random walk: 4.00966920305e-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]

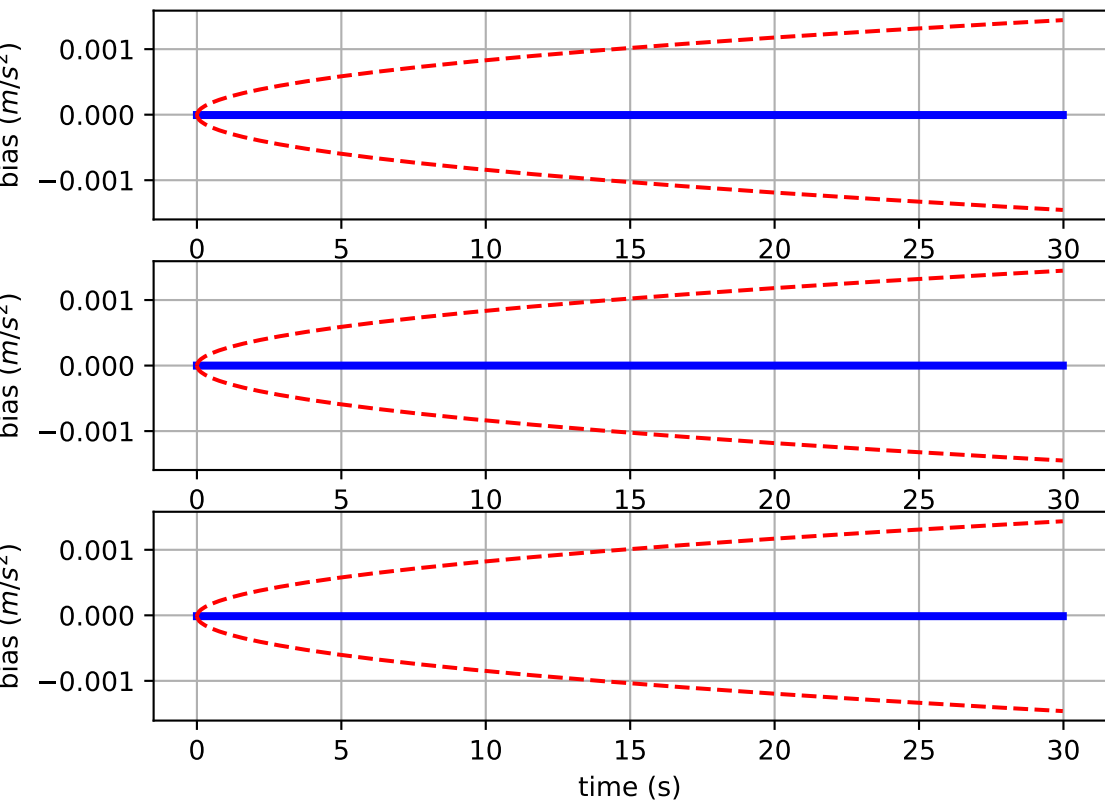
Comparison of predicted and measured specific force (imu0 frame)



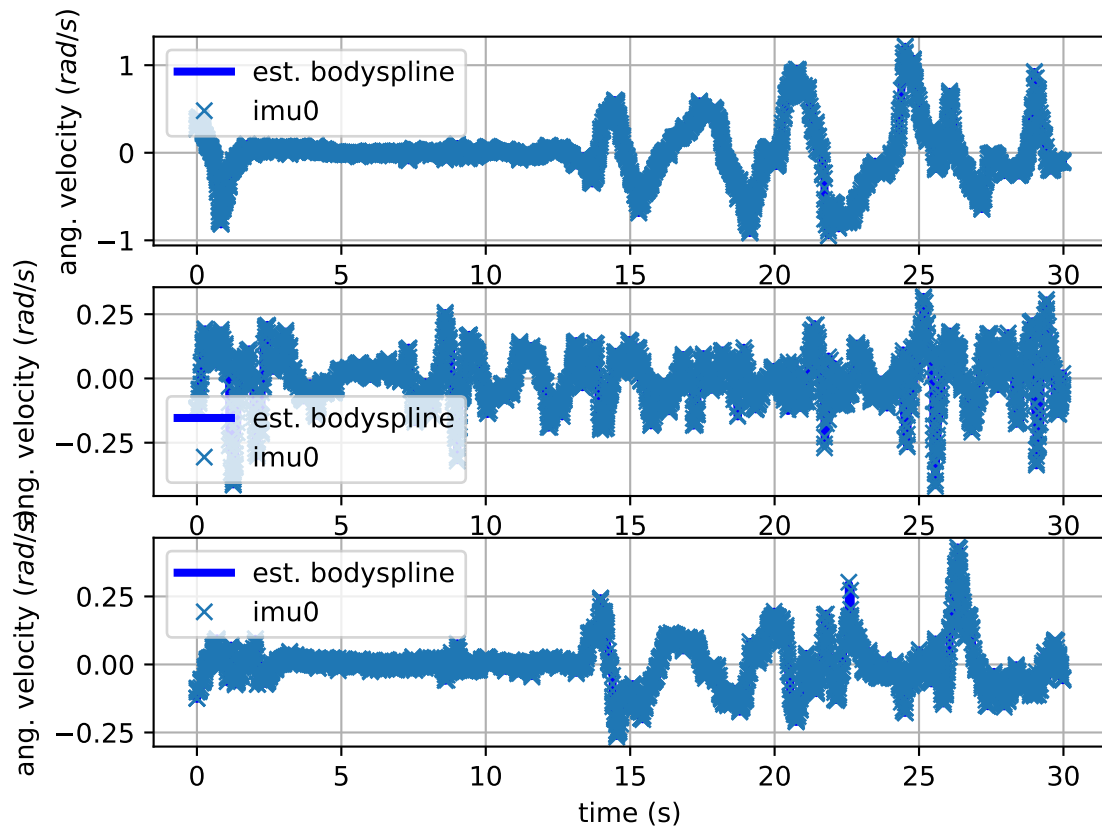
imu0: acceleration error



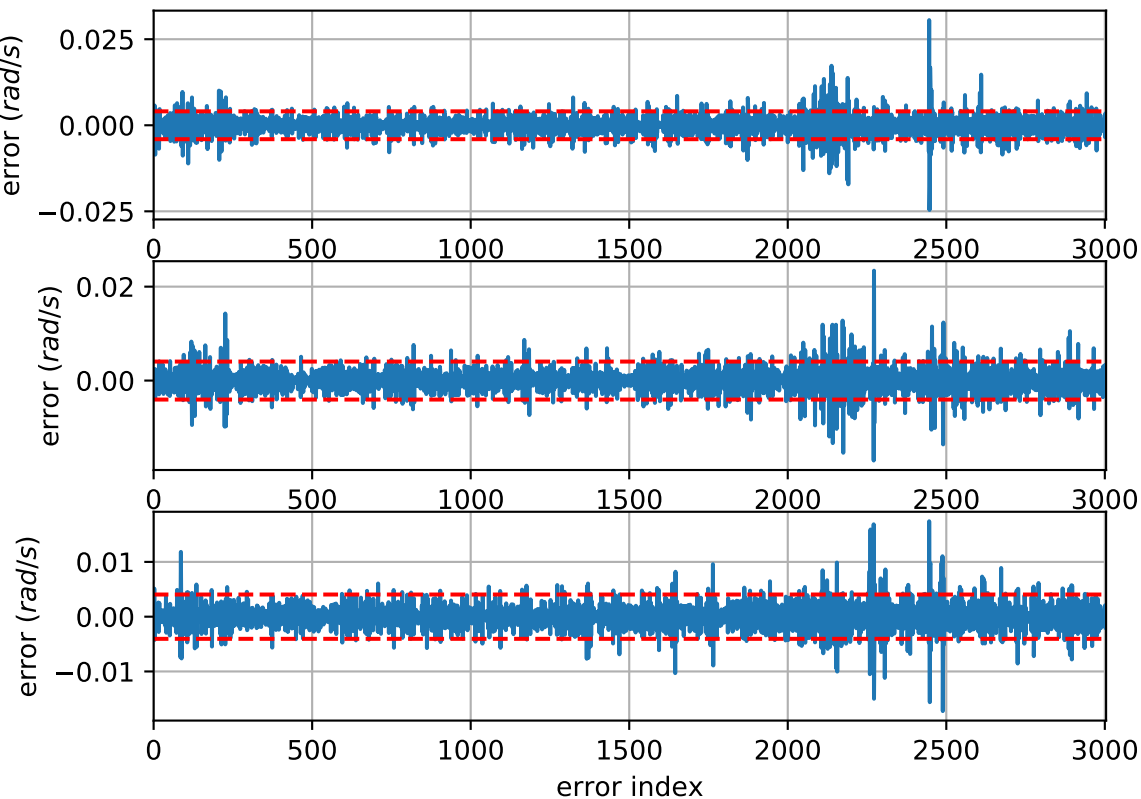
imu0: estimated accelerometer bias (imu frame)



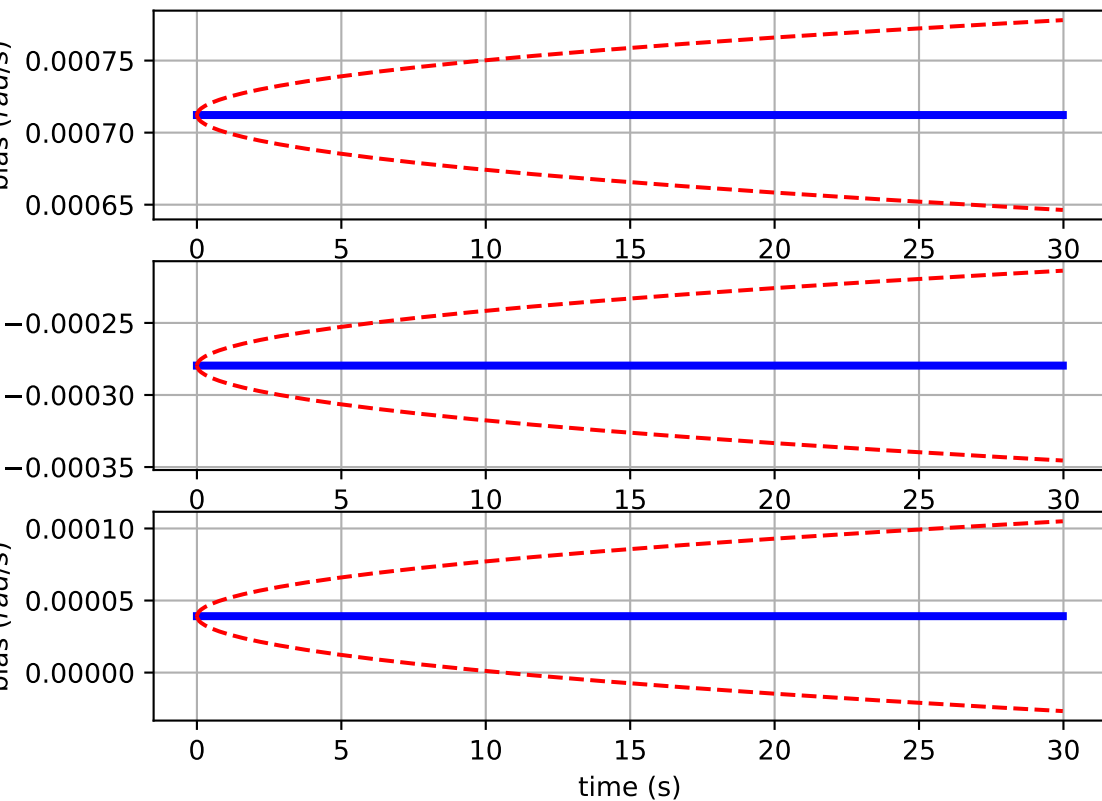
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

