

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.177066251277, median 0.157769637384, std: 0.10838867681

Gyroscope error (imu0): mean 1.23082098043, median 1.08374866489, std: 0.777382158702

Accelerometer error (imu0): mean 1.01531422058, median 0.765030573089, std: 1.05854636267

Residuals

Reprojection error (cam0) [px]: mean 0.177066251277, median 0.157769637384, std: 0.10838867681

Gyroscope error (imu0) [rad/s]: mean 0.00373724751896, median 0.00329067920797, std: 0.00236043225625

Accelerometer error (imu0) [m/s²]: mean 0.0354366774183, median 0.0267012330608, std: 0.0369455733268

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.99922582 -0.01866945 -0.03462978 -0.07496964]

[0.03459804 -0.00202011 0.99939927 0.01272283]

[-0.01872819 -0.99982367 -0.00137262 -0.06096745]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.99922582 0.03459804 -0.01872819 0.07332961]

[-0.01866945 -0.00202011 -0.99982367 -0.06233064]

[-0.03462978 0.99939927 -0.00137262 -0.01539505]

[0. 0. 0. 1.]]

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

-0.0193323825951

Gravity vector in target coords: [m/s²]

[-0.01126779 -9.66718953 -1.64734409]

Calibration configuration

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cam0

Camera model: pinhole

Focal length: [874.1267840073965, 873.9483946670699]

Principal point: [667.2641908325472, 513.0882392385041]

Distortion model: radtan

Distortion coefficients: [-0.0742277215145996, 0.07717129927545377, 0.0004196934949995159,
0.0010184746453992624]

Type: aprilgrid

Tags:

Rows: 6

Cols: 6

Size: 0.0352 [m]

Spacing 0.01056 [m]

IMU configuration

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IMU0:

Model: calibrated

Update rate: 400.0

Accelerometer:

Noise density: 0.00174510888846

Noise density (discrete): 0.0349021777692

Random walk: 0.000714709184887

Gyroscope:

Noise density: 0.000151819296972

Noise density (discrete): 0.00303638593944

Random walk: 8.05172097889e-06

T_ib (imu0 to imu0)

[[1. 0. 0. 0.]

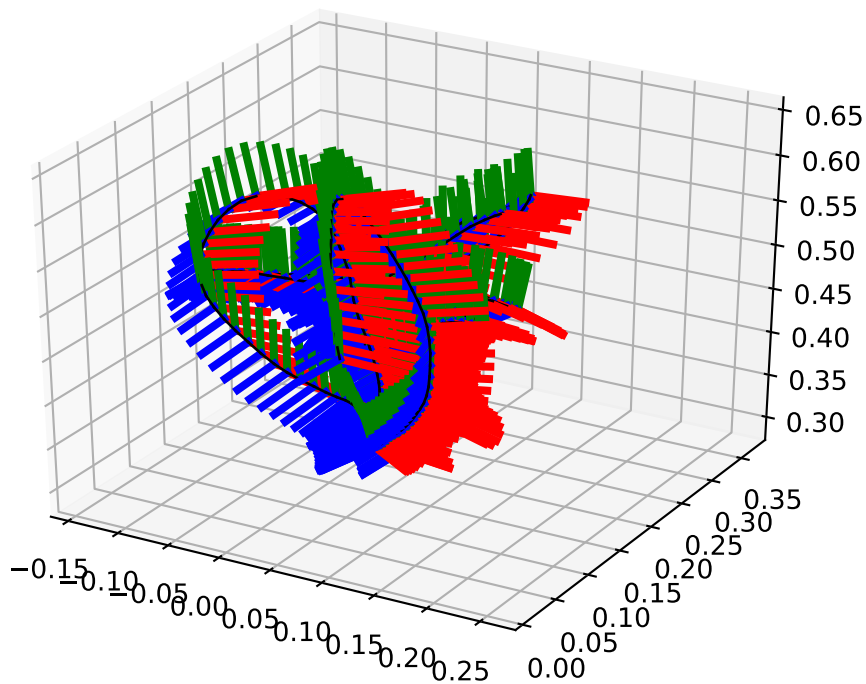
[0. 1. 0. 0.]

[0. 0. 1. 0.]

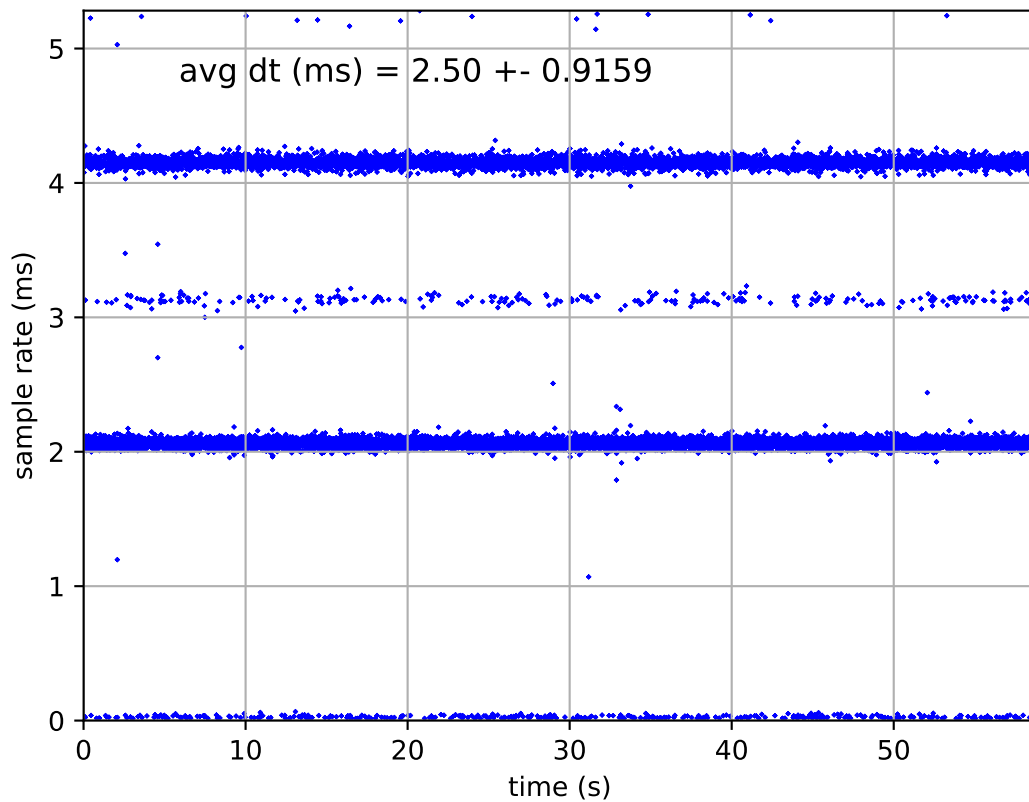
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

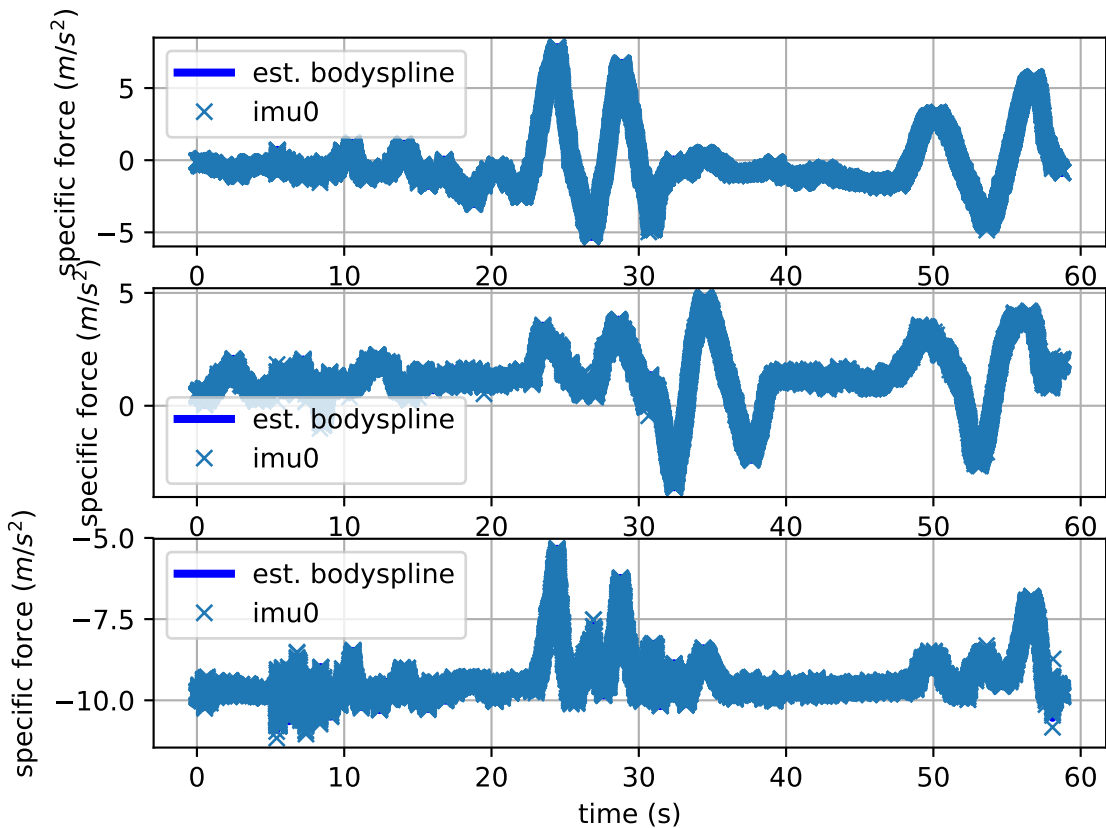
imu0: estimated poses



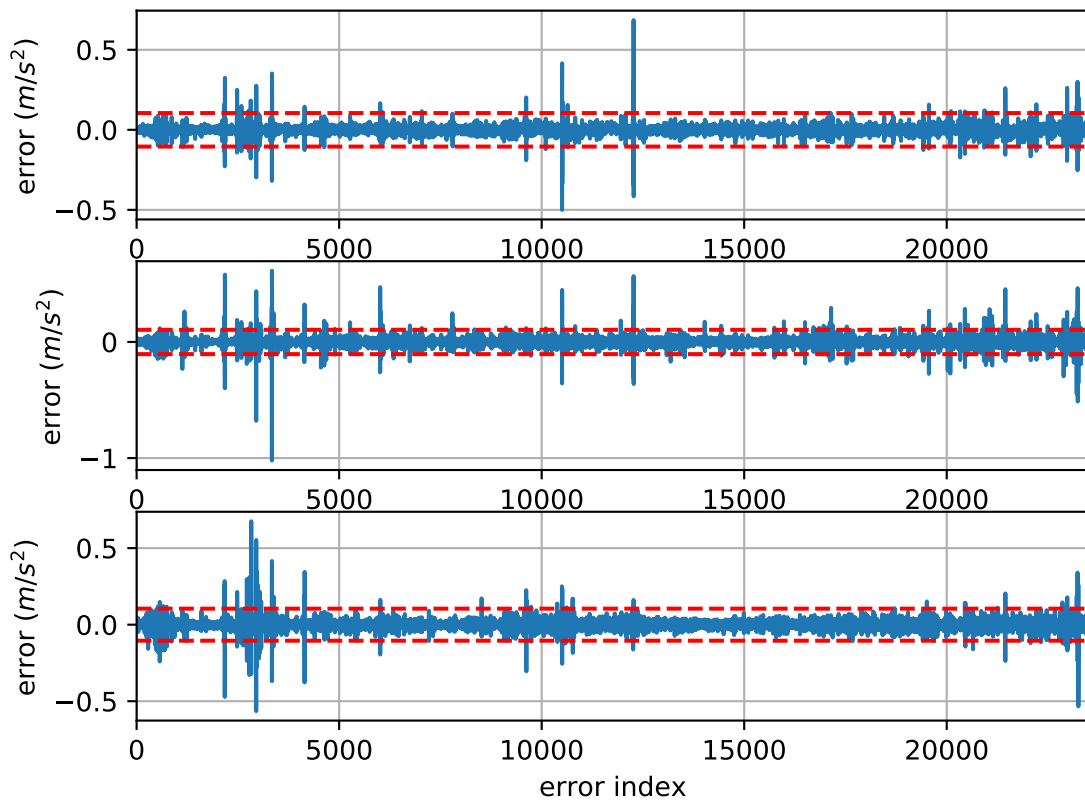
imu0: sample inertial rate



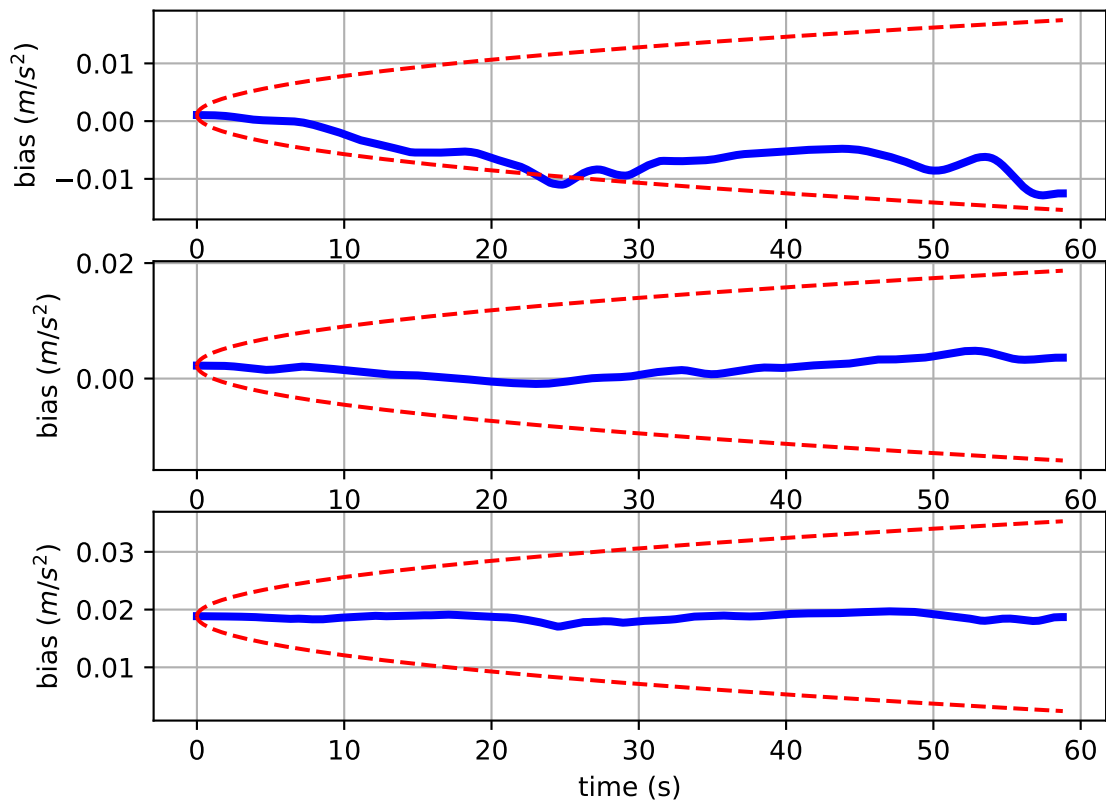
Comparison of predicted and measured specific force (imu0 frame)



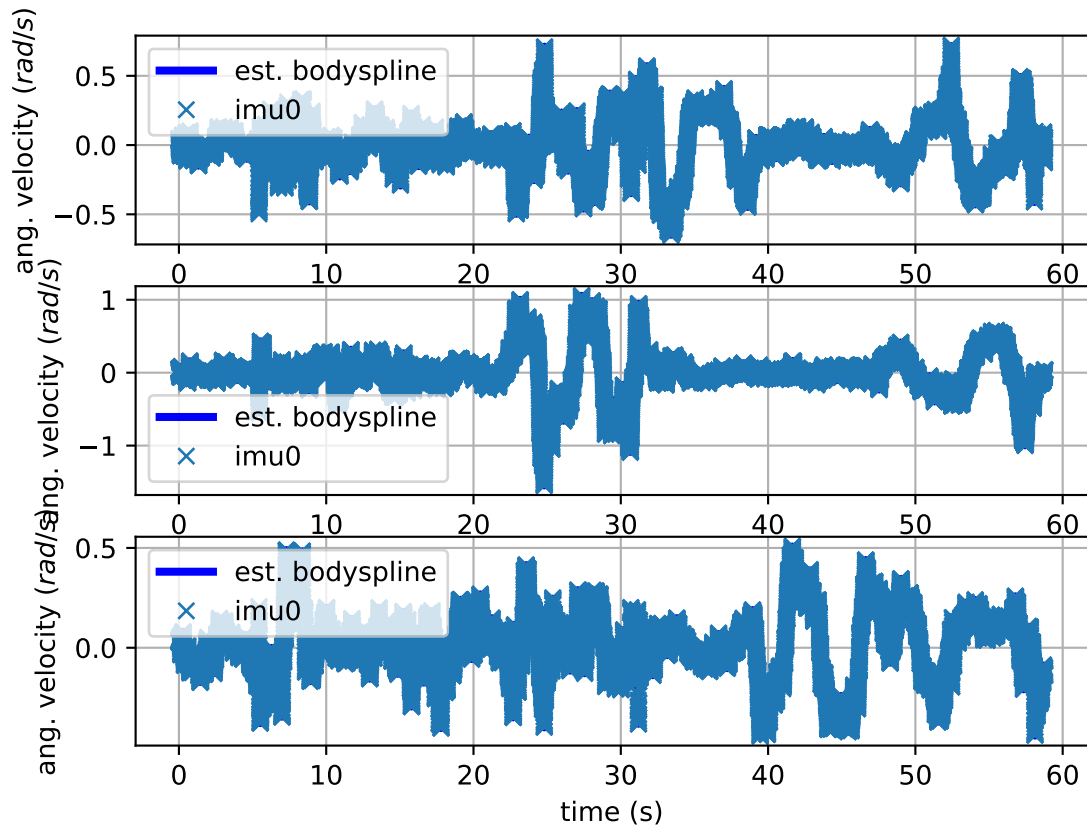
imu0: acceleration error



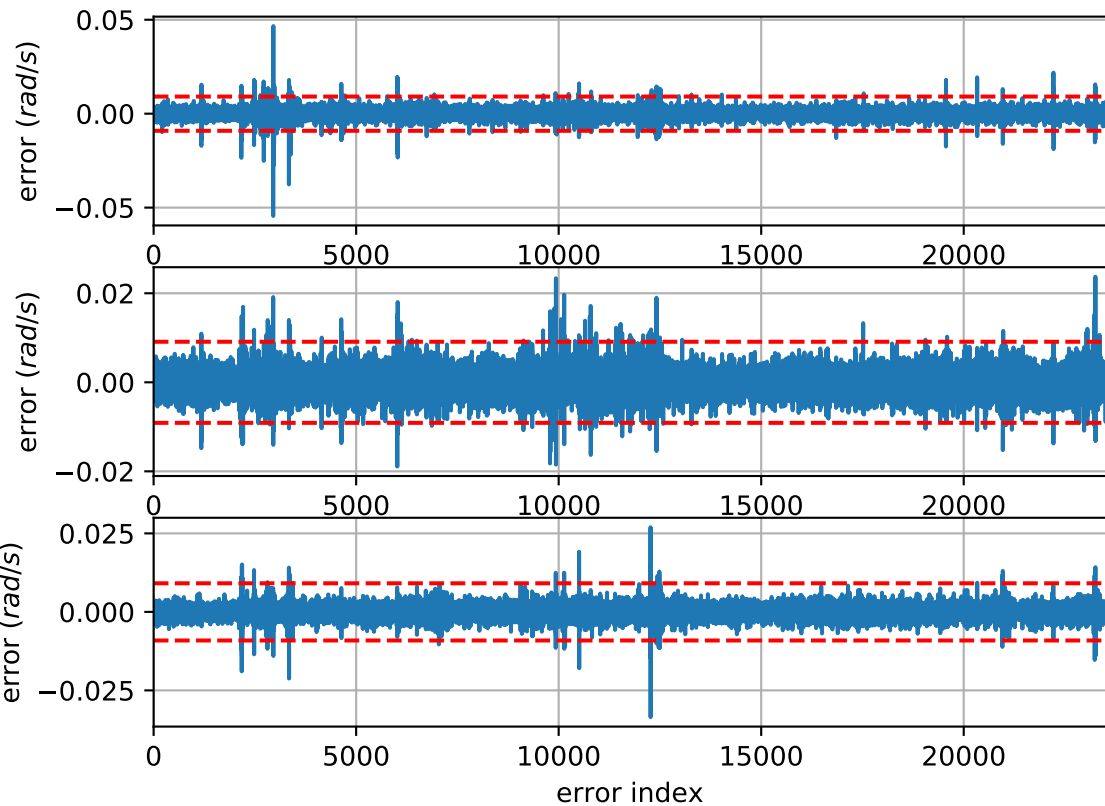
imu0: estimated accelerometer bias (imu frame)



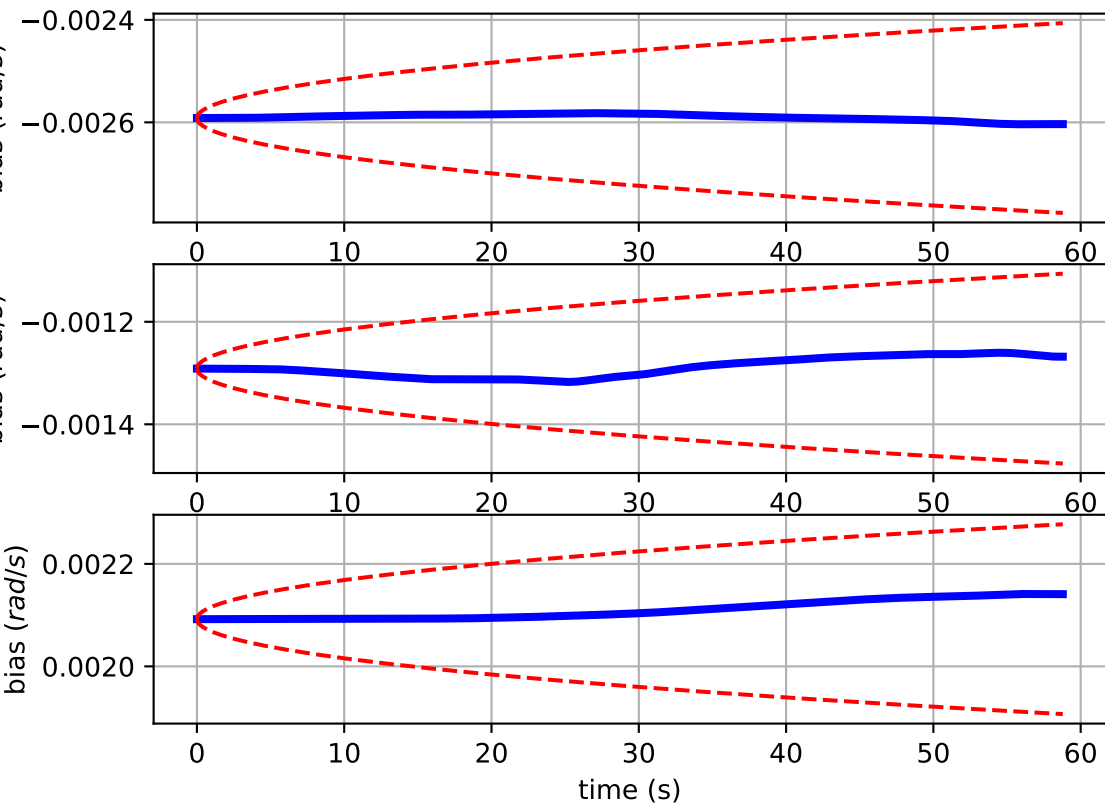
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

