

Calibration results

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Normalized Residuals

Reprojection error (cam0): mean 0.423474752379, median 0.351382685537, std: 0.306092963372

Gyroscope error (imu0): mean 0.621683453081, median 0.581672137302, std: 0.323174639431

Accelerometer error (imu0): mean 1.01070061405, median 0.939905945675, std: 0.584414911441

Residuals

Reprojection error (cam0) [px]: mean 0.423474752379, median 0.351382685537, std: 0.306092963372

Gyroscope error (imu0) [rad/s]: mean 0.00255439361191, median 0.00238999378926, std: 0.0013278706

Accelerometer error (imu0) [m/s²]: mean 0.0419742093196, median 0.0390341198533, std: 0.024270643

Transformation (cam0):

T_ci: (imu0 to cam0):

[[0.99997804 0.00652618 -0.00115564 -0.02622376]

[-0.00652974 0.99997386 -0.0031062 -0.00444461]

[0.00113534 0.00311367 0.99999451 -0.03042614]

[0. 0. 0. 1.]]

T_ic: (cam0 to imu0):

[[0.99997804 -0.00652974 0.00113534 0.0262287]

[0.00652618 0.99997386 0.00311367 0.00471037]

[-0.00115564 -0.0031062 0.99999451 0.03038187]

[0. 0. 0. 1.]]

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

0.00256943942204

Gravity vector in target coords: [m/s²]

[-0.11839315 -9.68837307 -1.5132195]

Calibration configuration

Camera model: pinhole

Focal length: [413.72633761633455, 412.0526032364699]

Principal point: [419.7451121530239, 239.06803350243075]

Distortion model: radtan

Distortion coefficients: [-0.048504294905933415, 0.034867235375424036, 0.00017396893513523017, -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: 400

Accelerometer:

Noise density: 0.00207649074

Noise density (discrete): 0.0415298148

Random walk: 0.00041327852

Gyroscope:

Noise density: 0.00020544166

Noise density (discrete): 0.0041088332

Random walk: 1.110622e-05

T_ib (imu0 to imu0)

[[1. 0. 0. 0.]

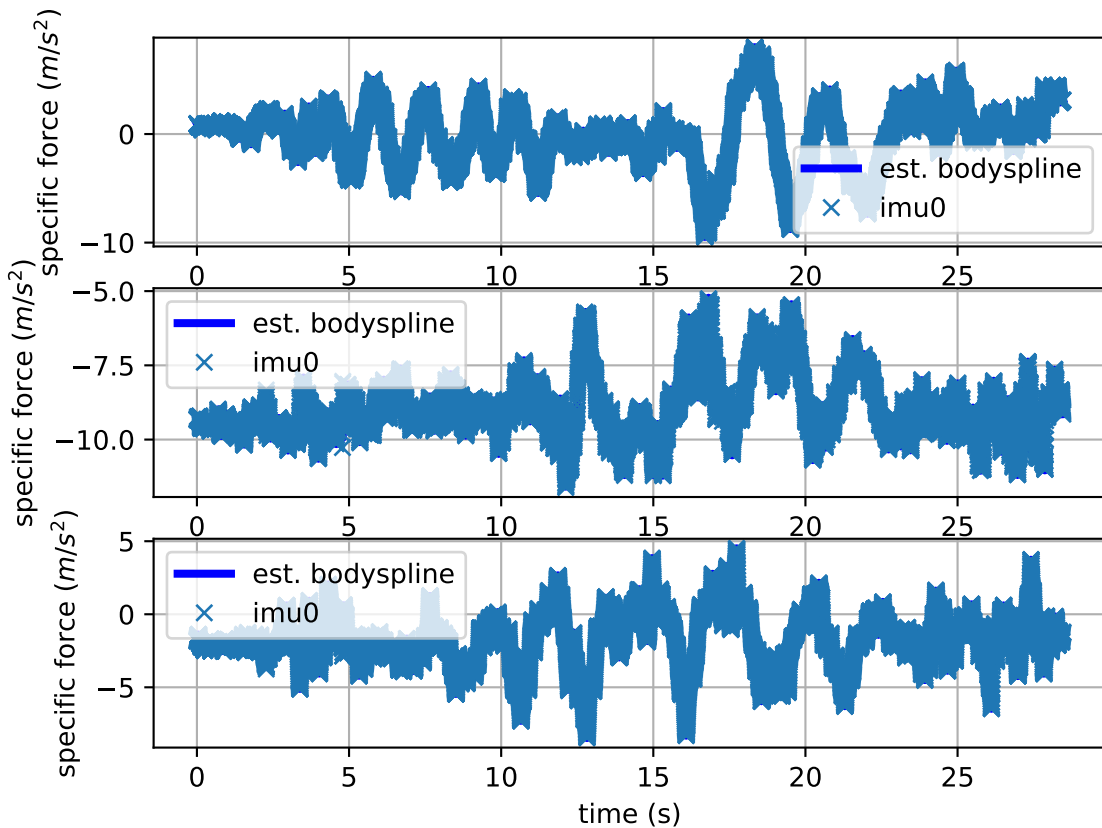
[0. 1. 0. 0.]

[0. 0. 1. 0.]

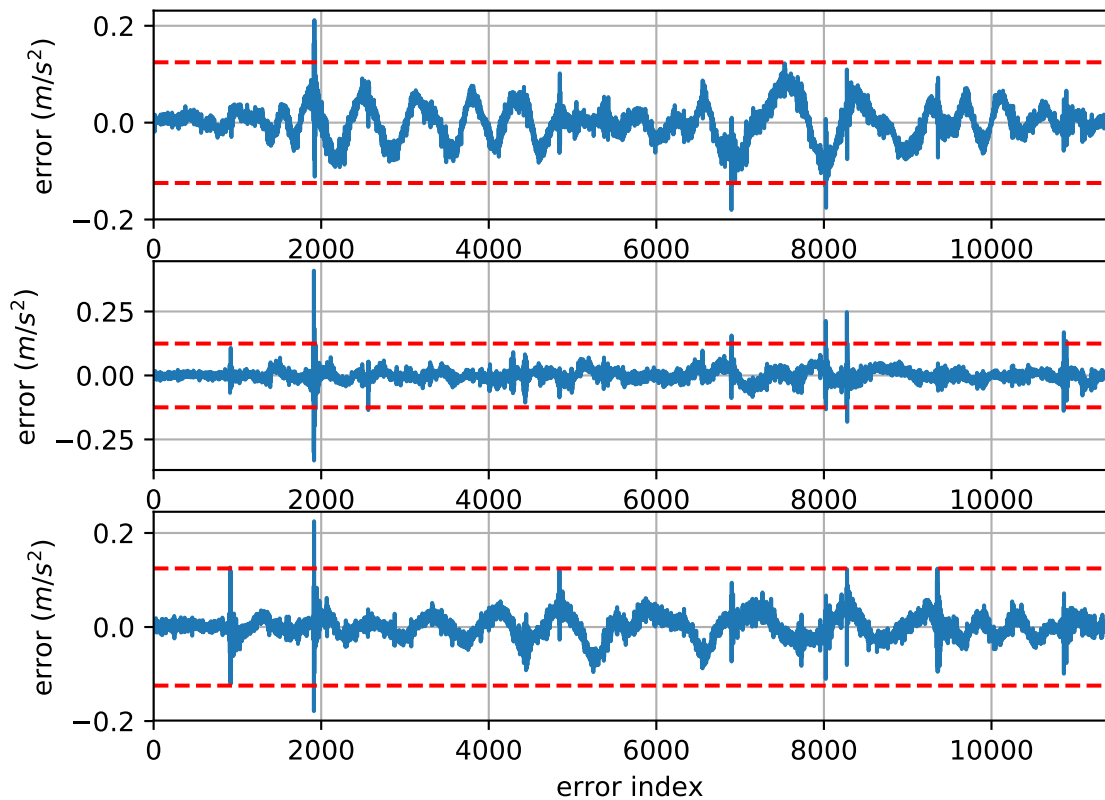
[0. 0. 0. 1.]]

time offset with respect to IMU0: 0.0 [s]

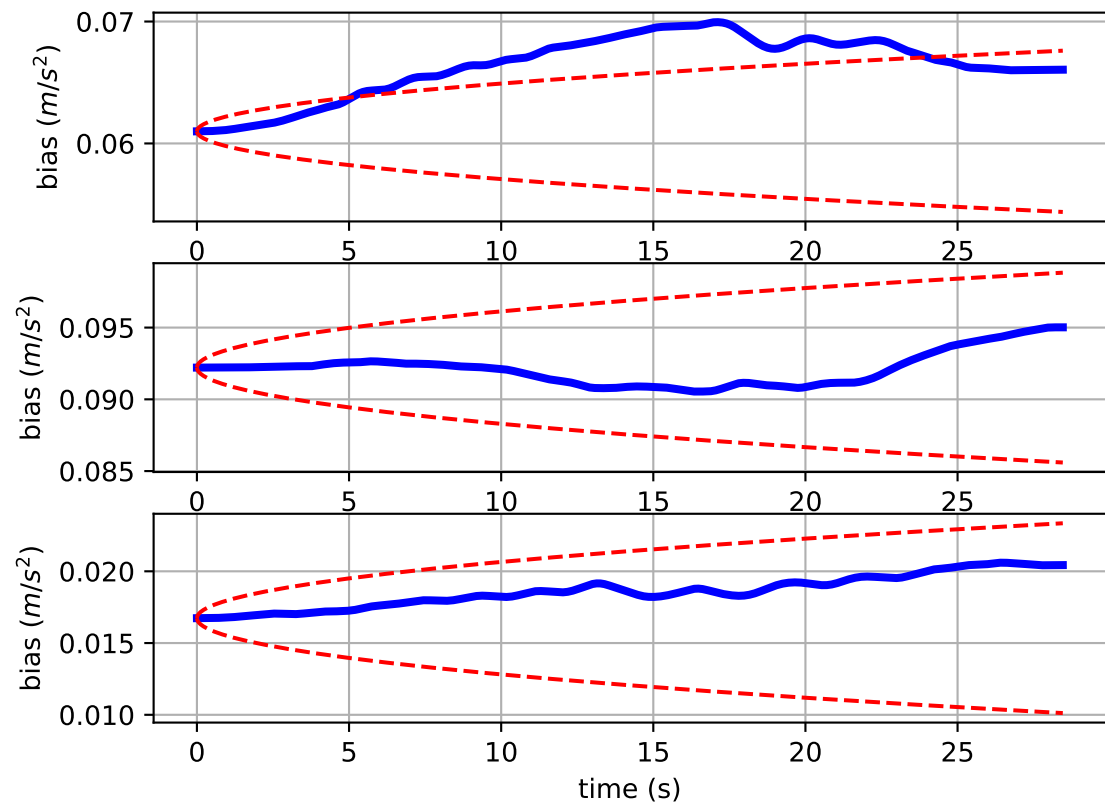
Comparison of predicted and measured specific force (imu0 frame)



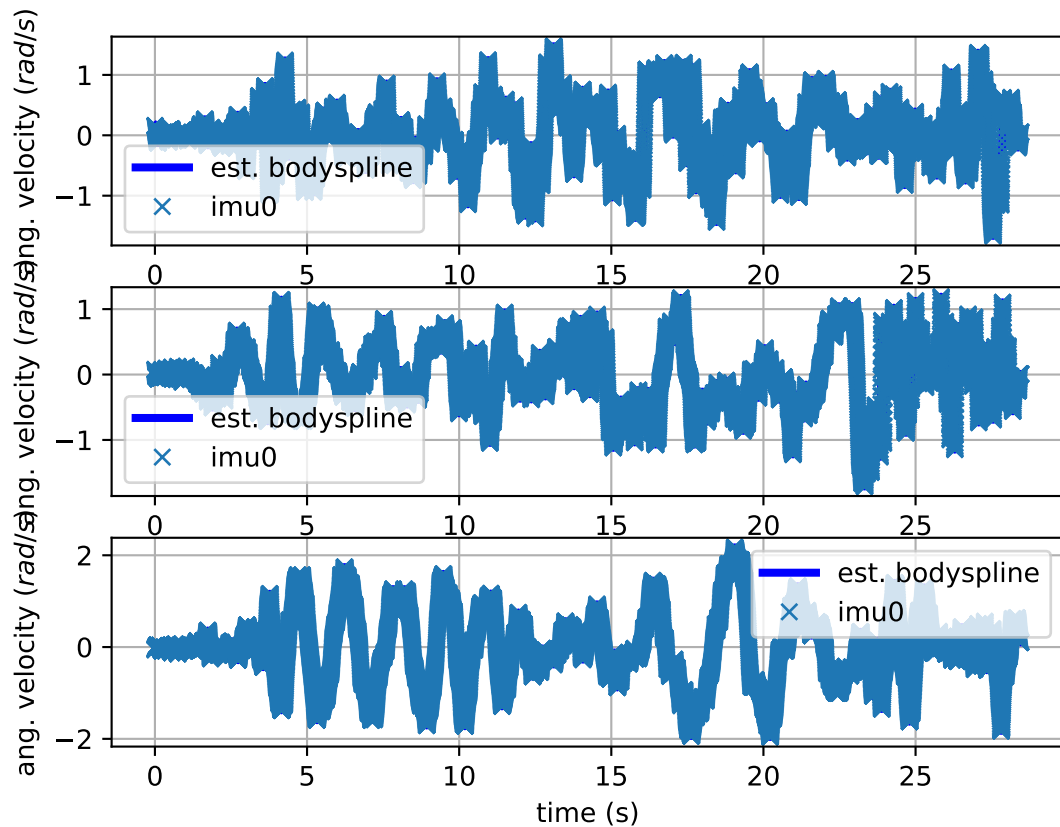
imu0: acceleration error



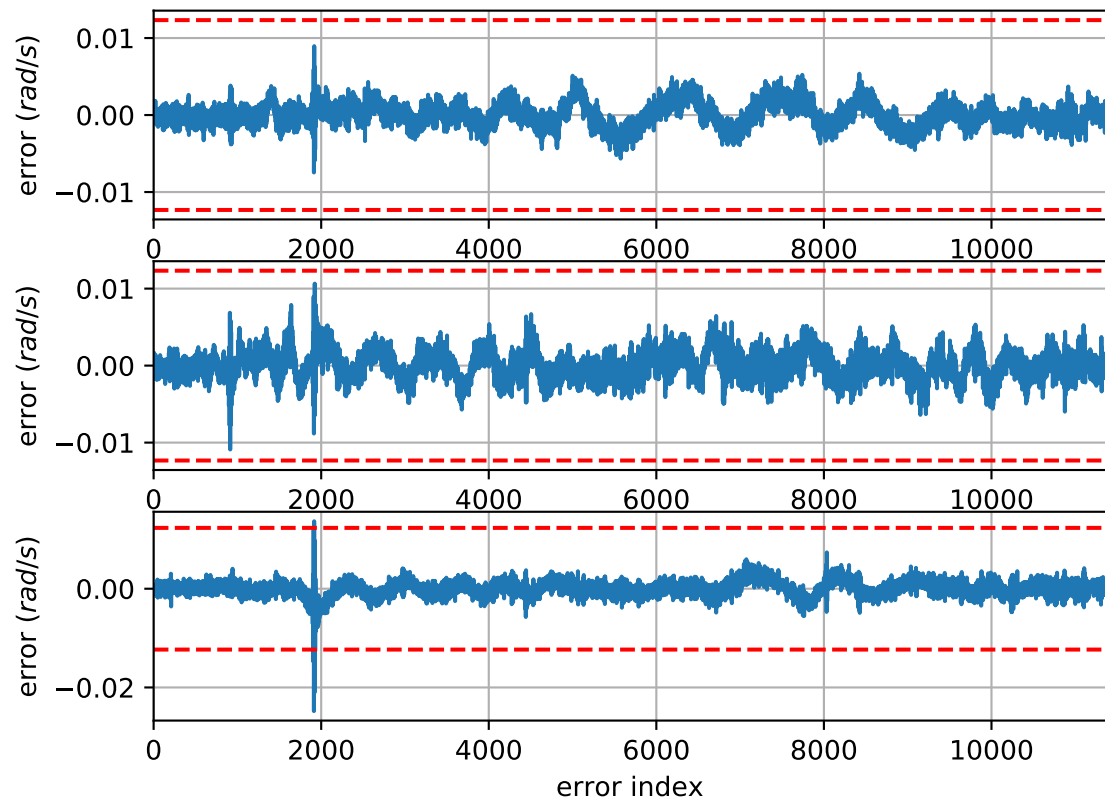
imu0: estimated accelerometer bias (imu frame)



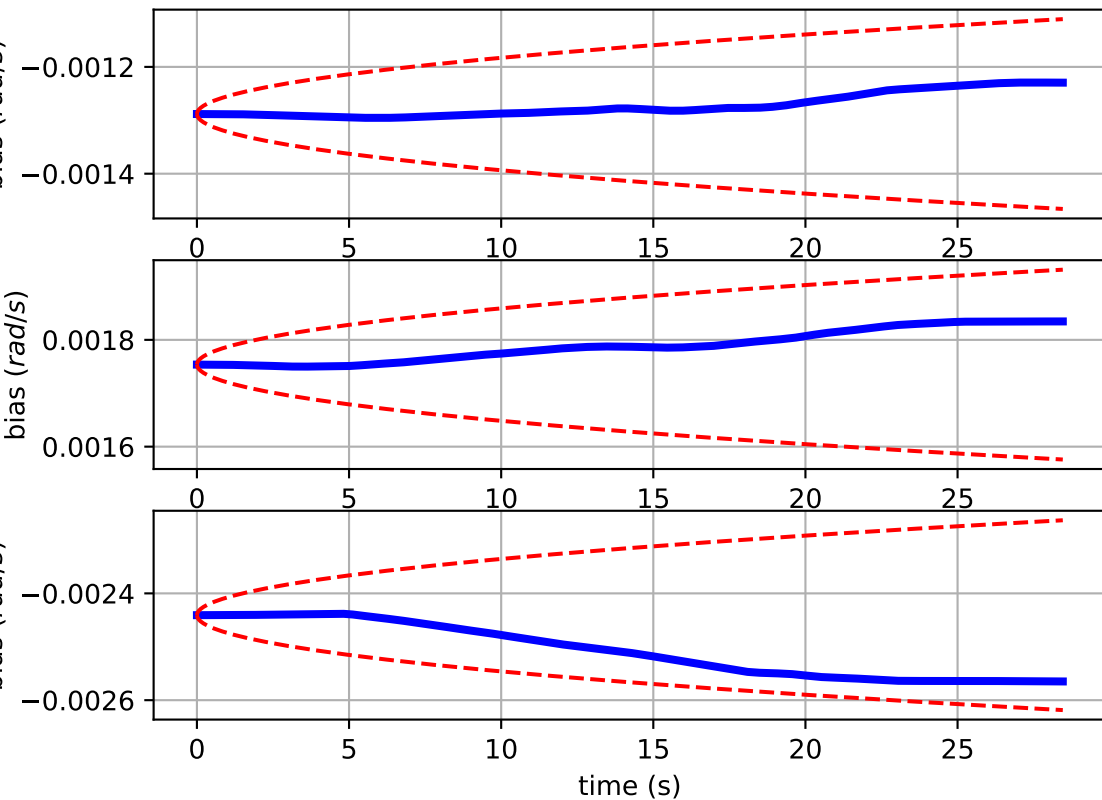
Comparison of predicted and measured angular velocities (body frame)



imu0: angular velocities error



imu0: estimated gyro bias (imu frame)



cam0: reprojection errors

