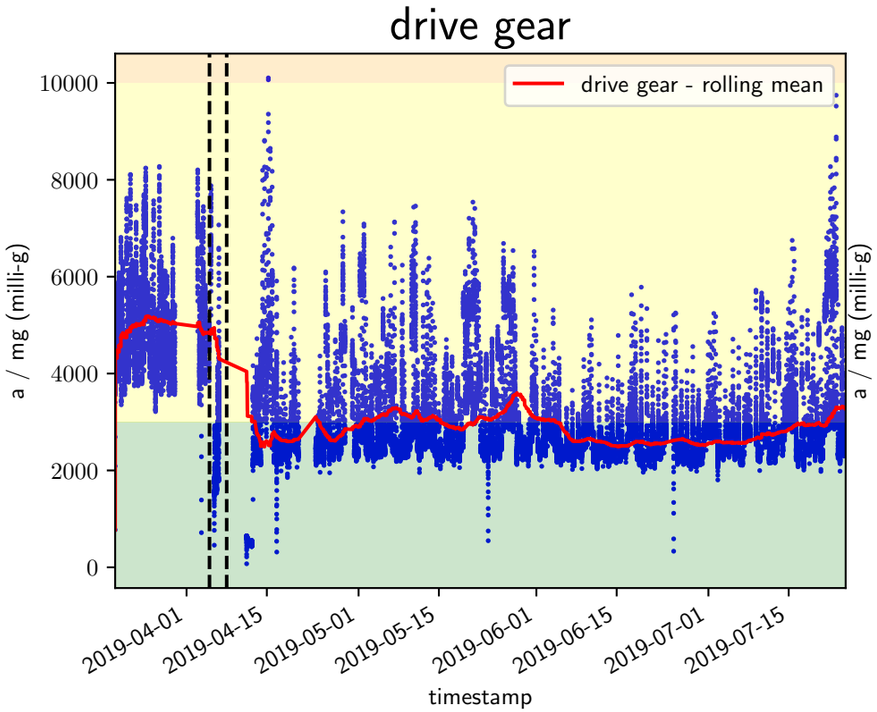
Diagnosis for FL03

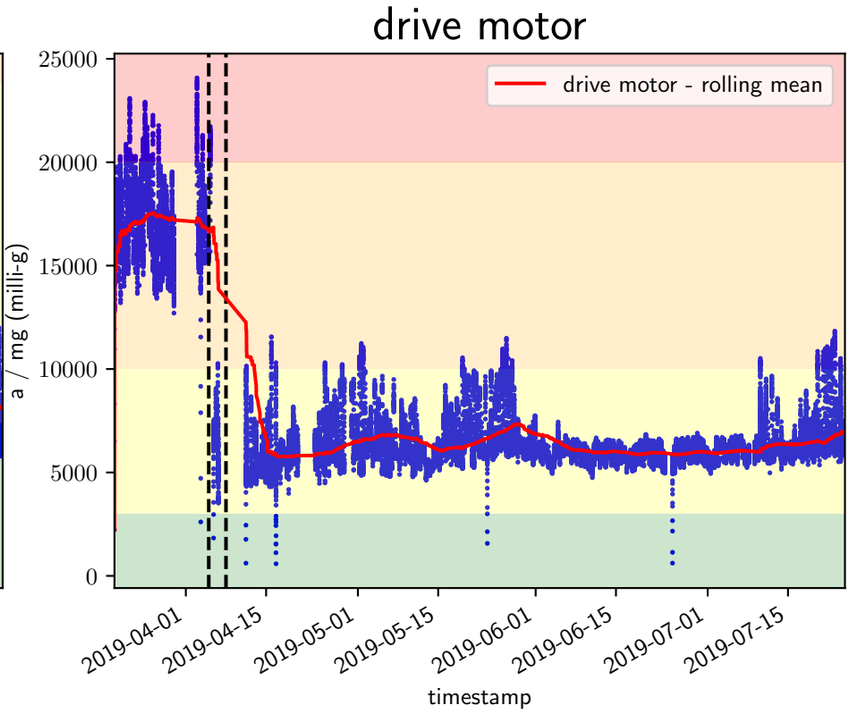
Categorization of measurements

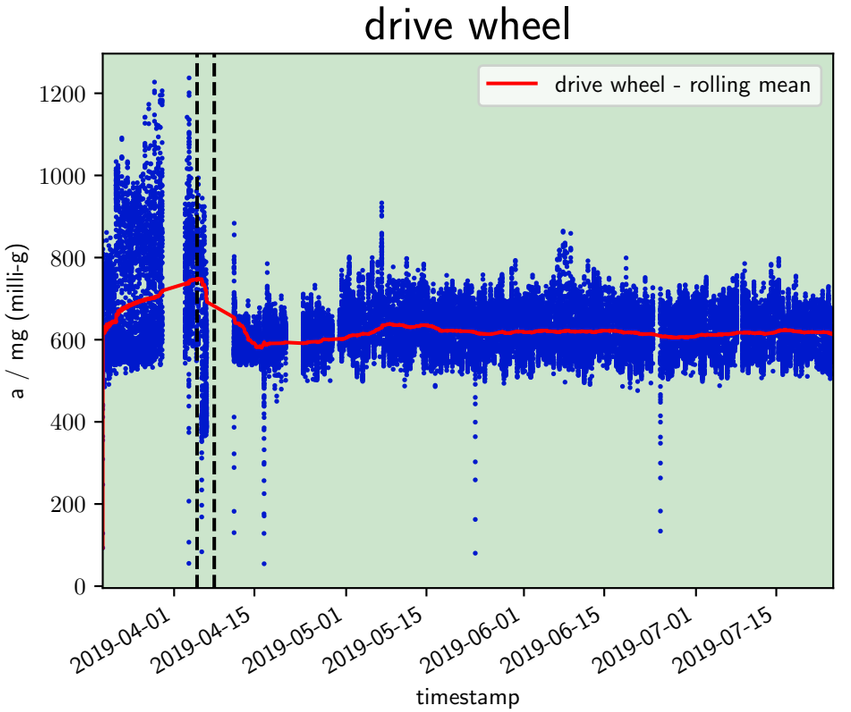
Acceleration sensors

Time interval: all data

Acceleration sensors all data







Good: $20027/30390 = 66\%$
Satisfactory: $10361/30390 = 34\%$
Unsatisfactory: $2/30390 = 0\%$
Unacceptable: $0/30390 = 0\%$

Unsatisfactory

Good: $22/30395 = 0\%$
Satisfactory: $26355/30395 = 87\%$
Unsatisfactory: $3637/30395 = 12\%$
Unacceptable: $381/30395 = 1\%$

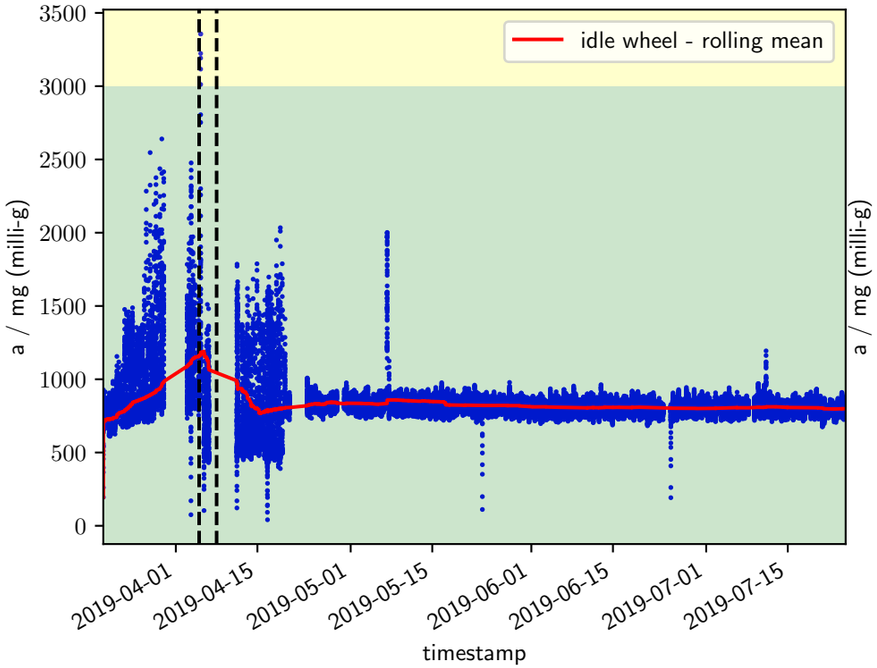
Unacceptable

Good: $30588/30588 = 100\%$
Satisfactory: $0/30588 = 0\%$
Unsatisfactory: $0/30588 = 0\%$
Unacceptable: $0/30588 = 0\%$

Good

Acceleration sensors all data

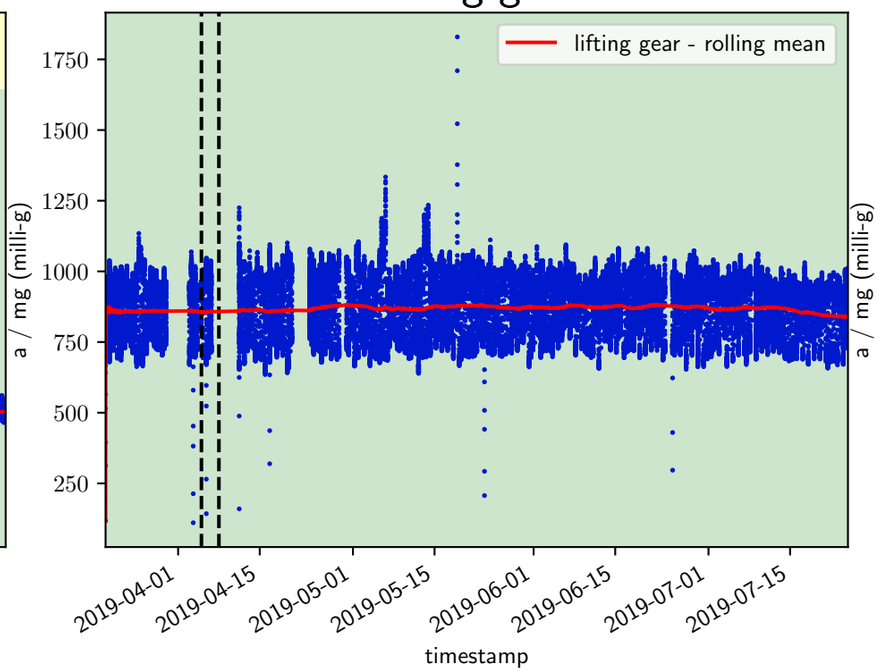
idle wheel



Good: $30585/30591 = 100\%$
Satisfactory: $6/30591 = 0\%$
Unsatisfactory: $0/30591 = 0\%$
Unacceptable: $0/30591 = 0\%$

Satisfactory

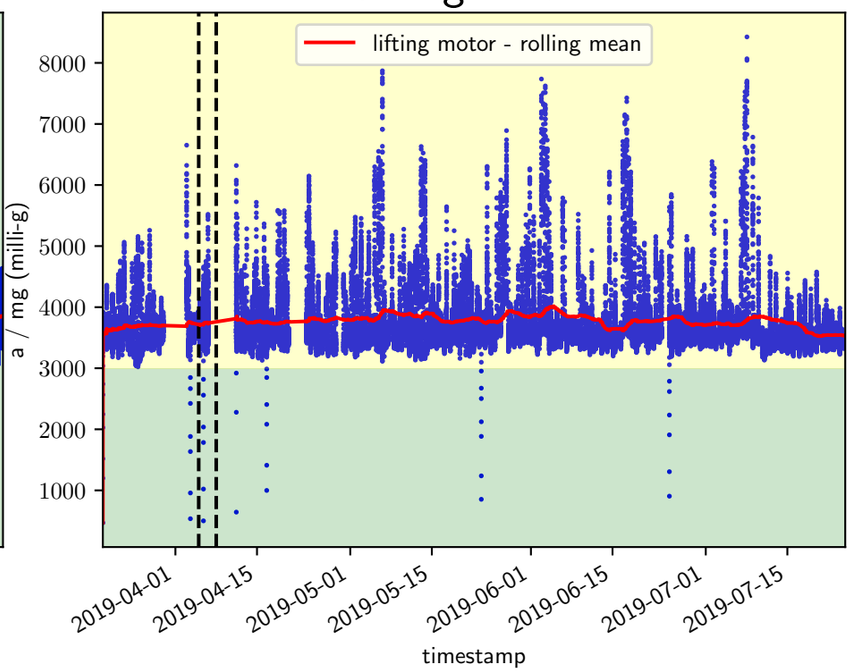
lifting gear



Good: $39099/39099 = 100\%$
Satisfactory: $0/39099 = 0\%$
Unsatisfactory: $0/39099 = 0\%$
Unacceptable: $0/39099 = 0\%$

Good

lifting motor



Good: $42/39101 = 0\%$
Satisfactory: $39059/39101 = 100\%$
Unsatisfactory: $0/39101 = 0\%$
Unacceptable: $0/39101 = 0\%$

Satisfactory

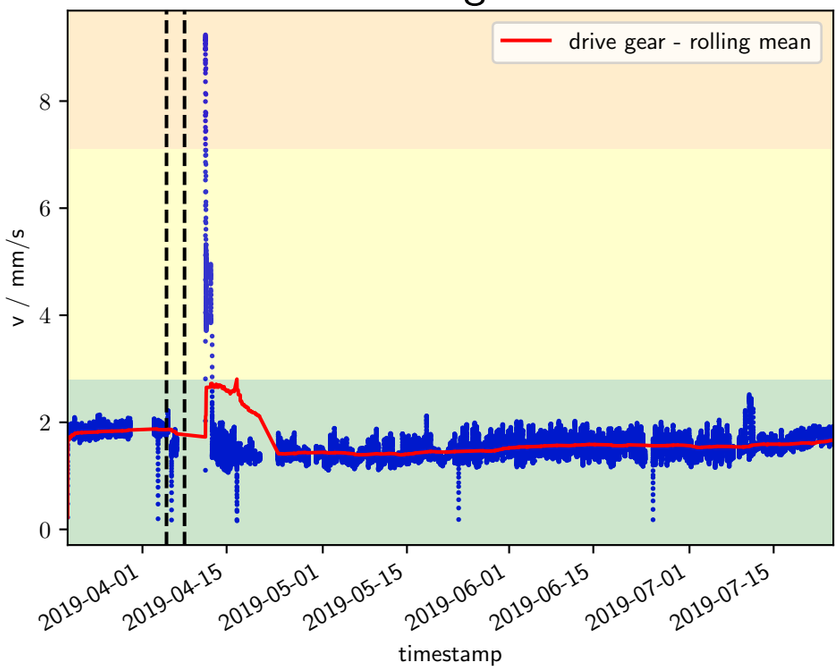
Categorization of measurements

Velocity sensors

Time interval: all data

Velocity sensors all data

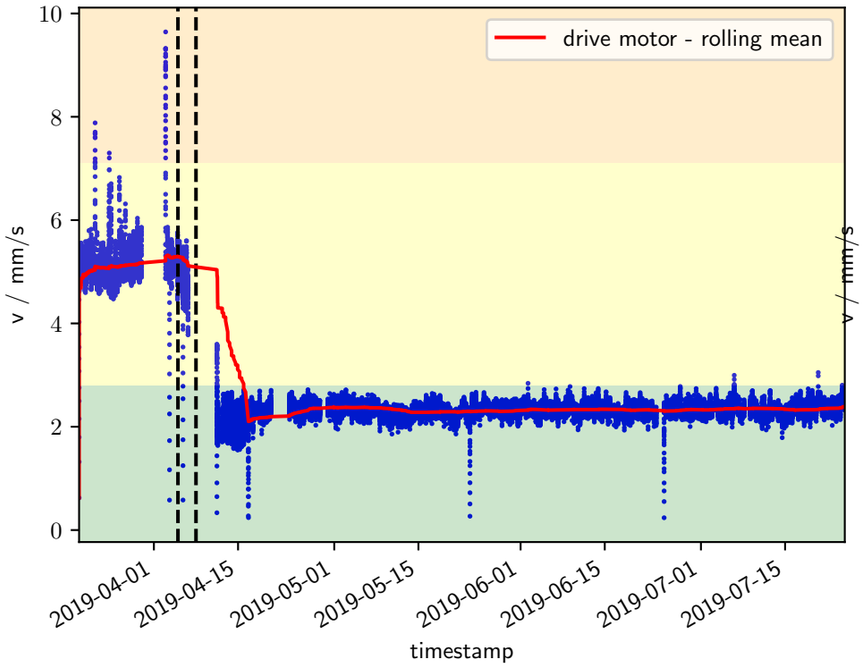
drive gear



Good: $20725/21084 = 98\%$
Satisfactory: $313/21084 = 1\%$
Unsatisfactory: $46/21084 = 0\%$
Unacceptable: $0/21084 = 0\%$

Unsatisfactory

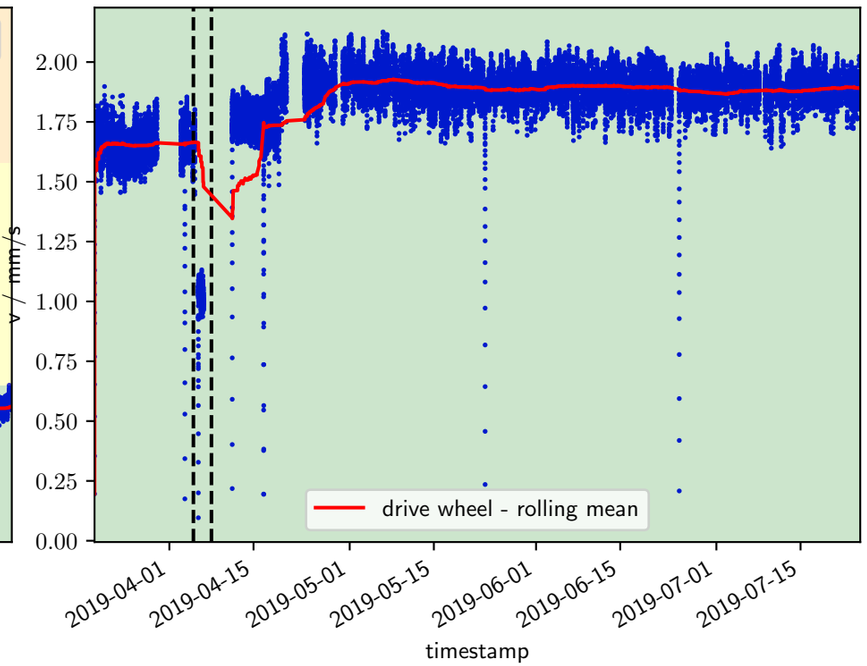
drive motor



Good: $18570/21561 = 86\%$
Satisfactory: $2949/21561 = 14\%$
Unsatisfactory: $42/21561 = 0\%$
Unacceptable: $0/21561 = 0\%$

Unsatisfactory

drive wheel

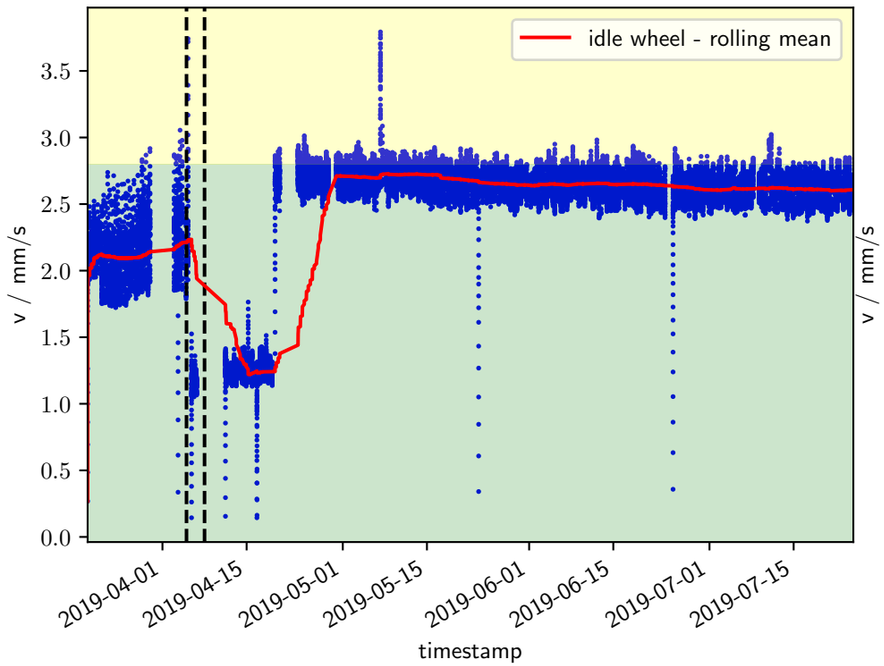


Good: $21384/21384 = 100\%$
Satisfactory: $0/21384 = 0\%$
Unsatisfactory: $0/21384 = 0\%$
Unacceptable: $0/21384 = 0\%$

Good

Velocity sensors all data

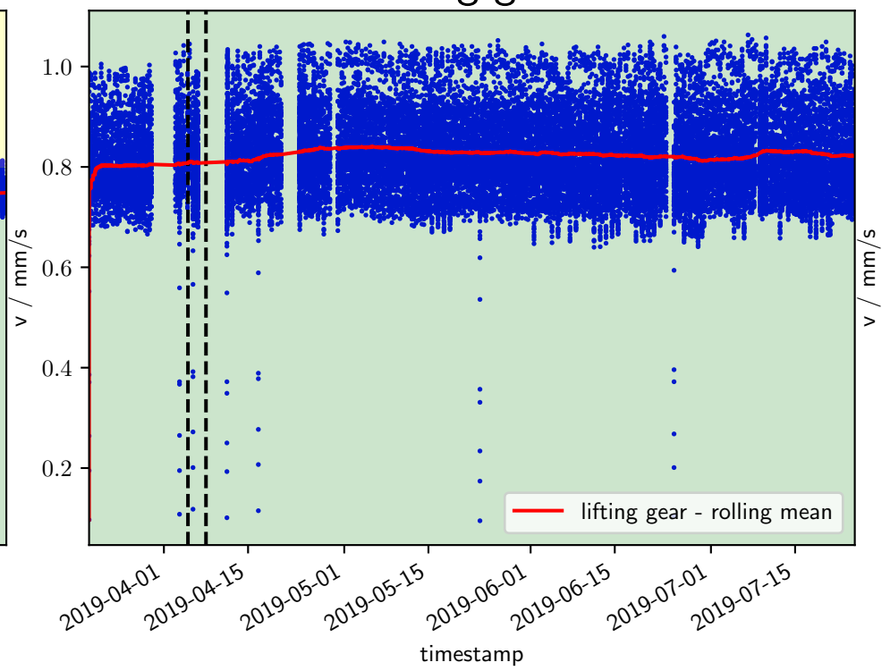
idle wheel



Good: $20027/21252 = 94\%$
Satisfactory: $1225/21252 = 6\%$
Unsatisfactory: $0/21252 = 0\%$
Unacceptable: $0/21252 = 0\%$

Satisfactory

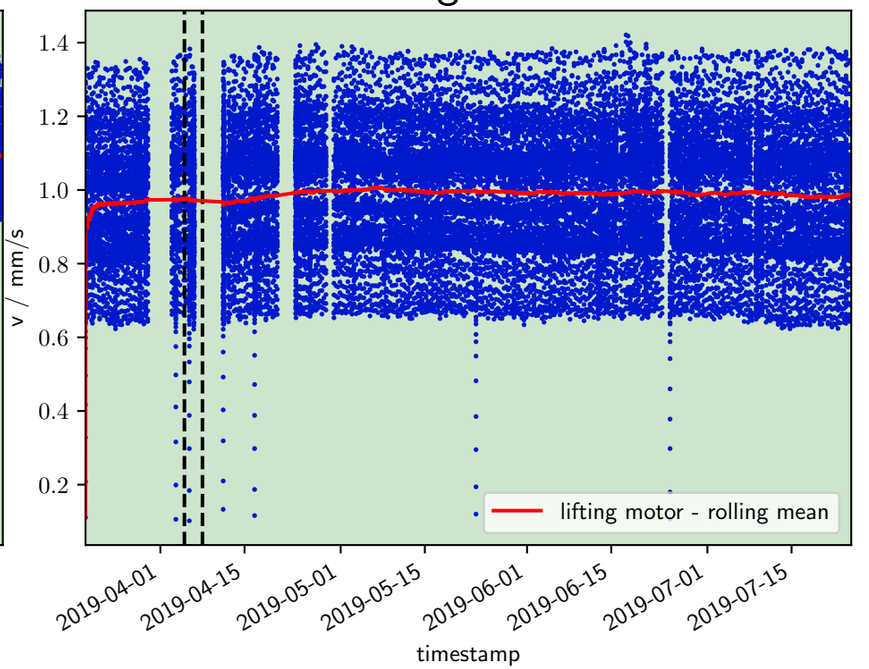
lifting gear



Good: $27360/27360 = 100\%$
Satisfactory: $0/27360 = 0\%$
Unsatisfactory: $0/27360 = 0\%$
Unacceptable: $0/27360 = 0\%$

Good

lifting motor



Good: $27599/27599 = 100\%$
Satisfactory: $0/27599 = 0\%$
Unsatisfactory: $0/27599 = 0\%$
Unacceptable: $0/27599 = 0\%$

Good

Compatibility check for velocity sensors

New data:from 2019-03-01 until 2019-04-01

Referent data: recommended distribution (from .config)

Velocity sensors

drive gear

$\mu_{ref} = 1.57$
$\sigma_{ref} = 0.14$
$\sigma^2_{ref} = 0.02$

$\mu_{new} = 1.85$
$\sigma_{new} = 0.1$
$\sigma^2_{new} = 0.01$

$good_{cnt}/all_{cnt}$
1986 / 2067 = 96%

GOOD FIT

drive motor

$\mu_{ref} = 2.33$
$\sigma_{ref} = 0.14$
$\sigma^2_{ref} = 0.02$

$\mu_{new} = 5.15$
$\sigma_{new} = 0.44$
$\sigma^2_{new} = 0.2$

$good_{cnt}/all_{cnt}$
2 / 2111 = 0%

BAD FIT

drive wheel

$\mu_{ref} = 1.89$
$\sigma_{ref} = 0.14$
$\sigma^2_{ref} = 0.02$

$\mu_{new} = 1.66$
$\sigma_{new} = 0.1$
$\sigma^2_{new} = 0.01$

$good_{cnt}/all_{cnt}$
2116 / 2136 = 99%

GOOD FIT

idle wheel

$\mu_{ref} = 2.64$
$\sigma_{ref} = 0.14$
$\sigma^2_{ref} = 0.02$

$\mu_{new} = 2.13$
$\sigma_{new} = 0.22$
$\sigma^2_{new} = 0.05$

$good_{cnt}/all_{cnt}$
685 / 2121 = 32%

BAD FIT

lifting gear

$\mu_{ref} = 0.82$
$\sigma_{ref} = 0.14$
$\sigma^2_{ref} = 0.02$

$\mu_{new} = 0.8$
$\sigma_{new} = 0.07$
$\sigma^2_{new} = 0.01$

$good_{cnt}/all_{cnt}$
2583 / 2588 = 100%

GOOD FIT

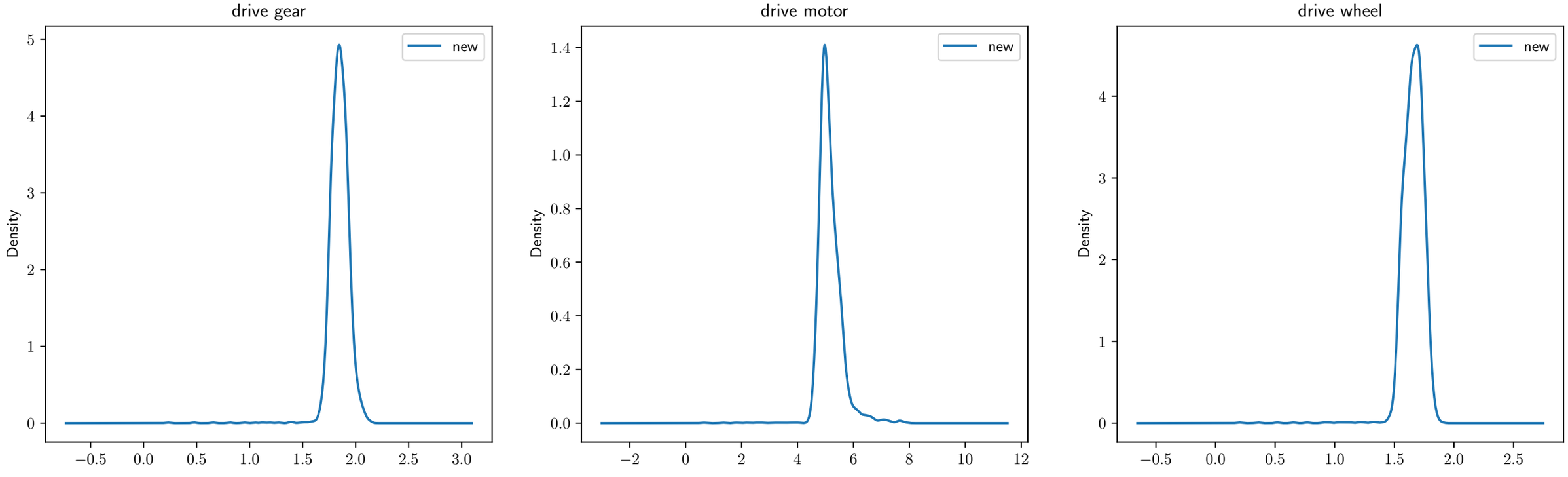
lifting motor

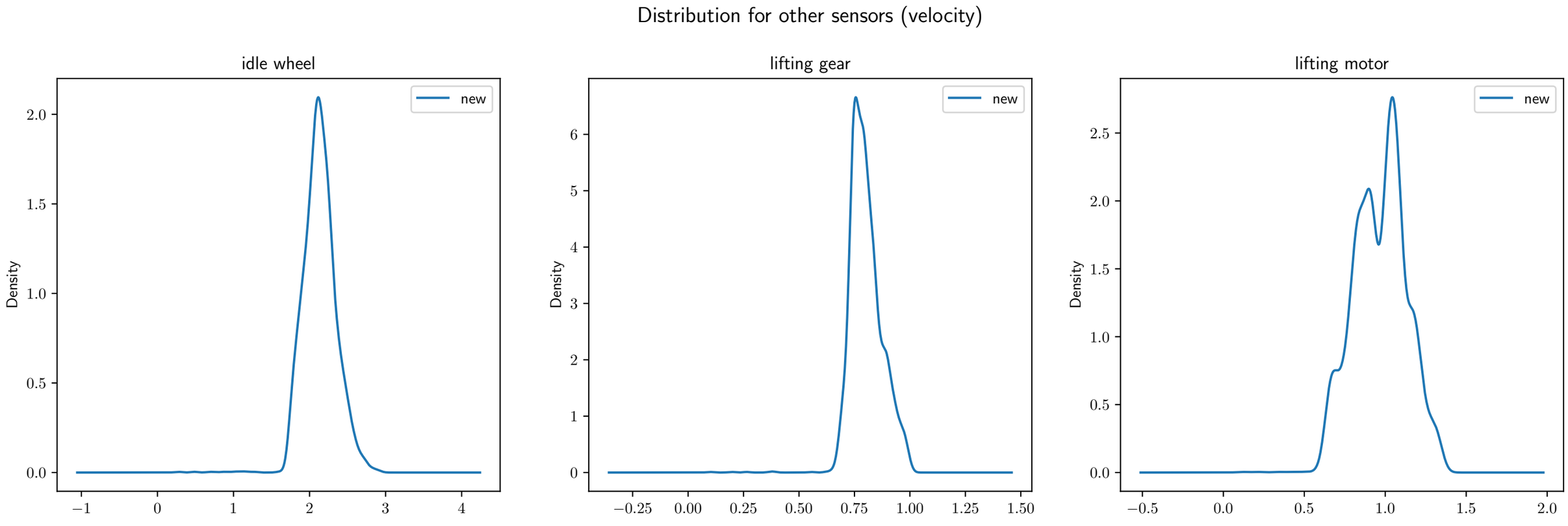
$\mu_{ref} = 0.99$
$\sigma_{ref} = 0.14$
$\sigma^2_{ref} = 0.02$

$\mu_{new} = 0.97$
$\sigma_{new} = 0.16$
$\sigma^2_{new} = 0.03$

$good_{cnt}/all_{cnt}$
2623 / 2628 = 100%

GOOD FIT


Distribution for drive sensors (velocity)
drive gear
drive motor
drive wheel
new
Density
0
1
2
3
4
5
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
−0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
−2
0
2
4
6
8
10
12

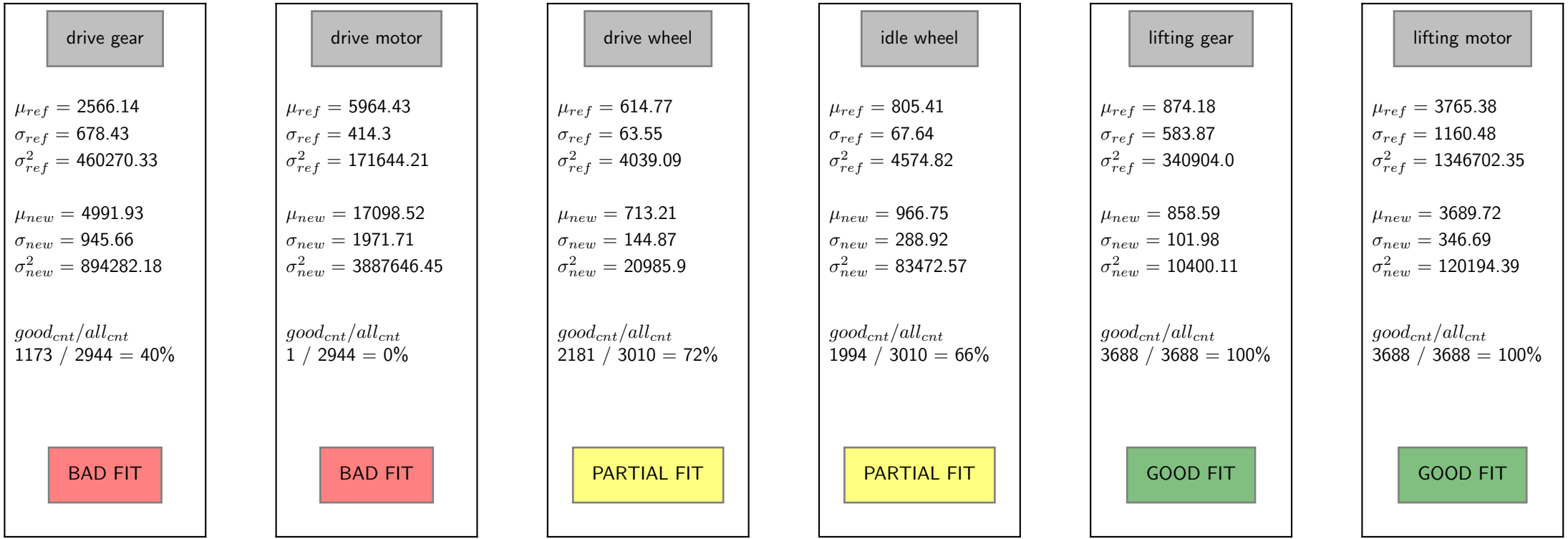

Distribution for other sensors (velocity)
idle wheel
lifting gear
lifting motor
new
Density
0.0
0.5
1.0
1.5
2.0
−1
0
1
2
3
4
0
1
2
3
4
5
6
−0.25
0.00
0.25
0.50
0.75
1.00
1.25
1.50
0.0
0.5
1.0
1.5
2.0
2.5
−0.5
0.0
0.5
1.0
1.5
2.0

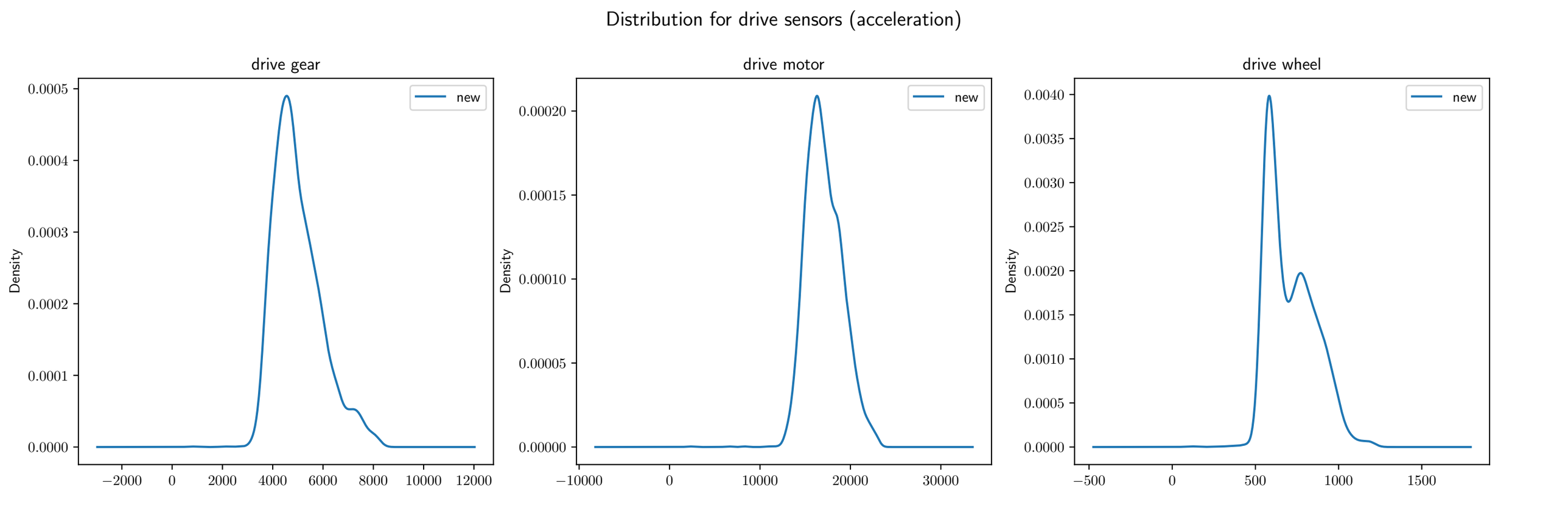
Compatibility check for acceleration sensors

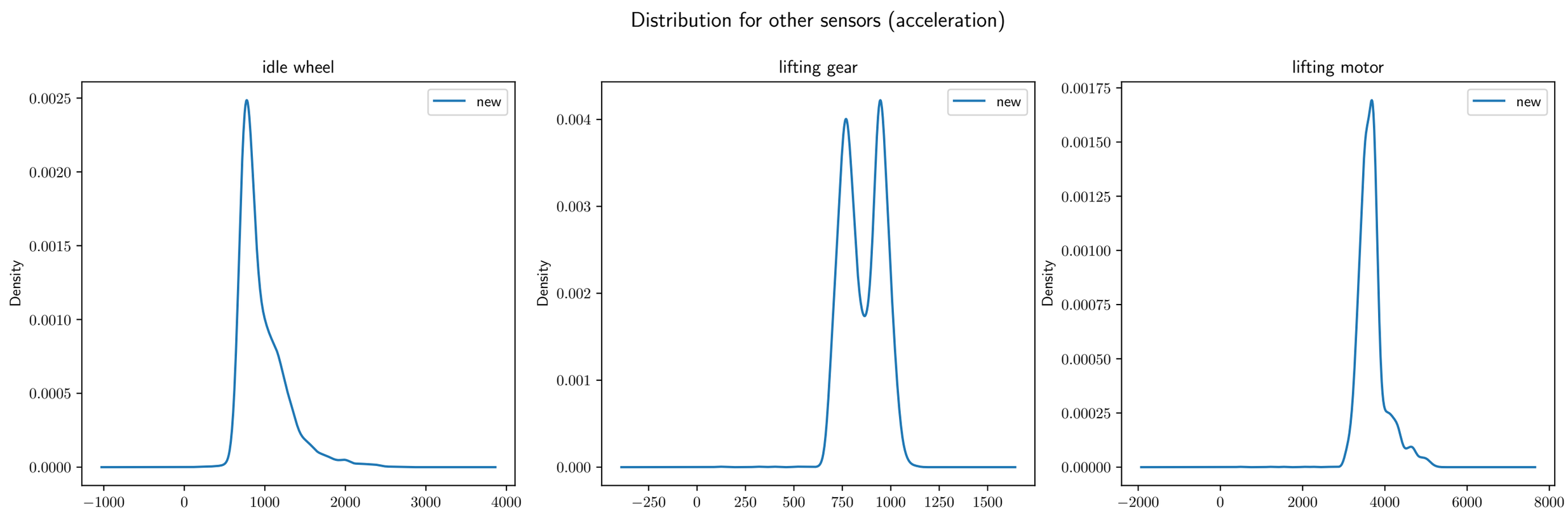
New data:from 2019-03-01 until 2019-04-01

Referent data: recommended distribution (from .config)

Acceleration sensors




Distribution for drive sensors (acceleration)
drive gear
drive motor
drive wheel
new
Density
0.0005
0.0004
0.0003
0.0002
0.0001
0.0000
−2000
0
2000
4000
6000
8000
10000
12000
0.00020
0.00015
0.00010
0.00005
0.00000
−10000
0
10000
20000
30000
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
−500
0
500
1000
1500


Distribution for other sensors (acceleration)
idle wheel
lifting gear
lifting motor
new
Density
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
−1000
0
1000
2000
3000
4000
0.004
0.003
0.002
0.001
0.000
−250
250
500
750
1250
1500
0.00175
0.00150
0.00125
0.00100
0.00075
0.00050
0.00025
0.00000
−2000
2000
4000
6000
8000