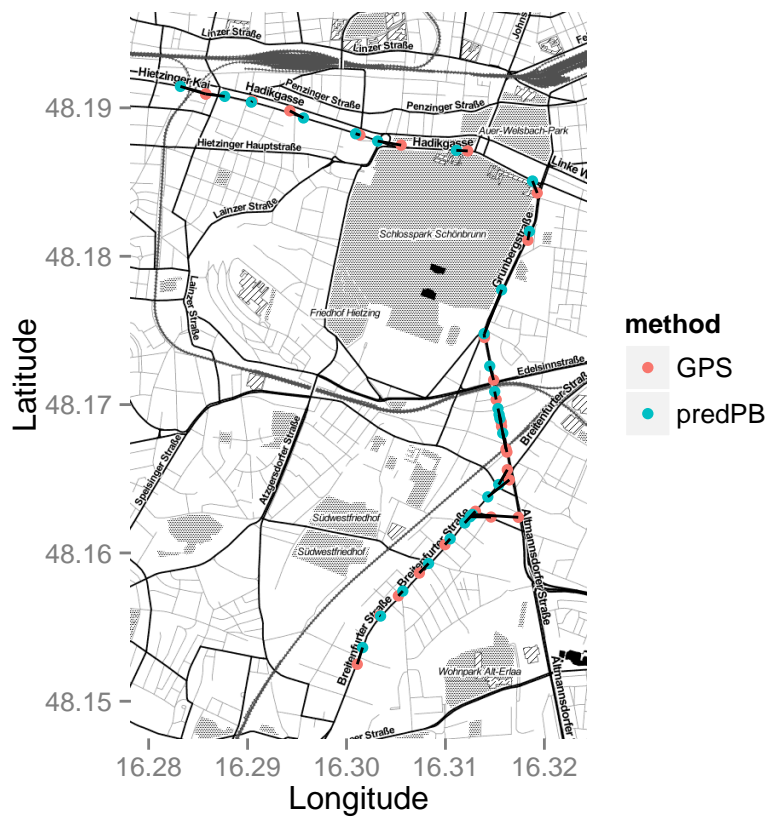# Subscriber 144

Distance error between observed and predicted handover:
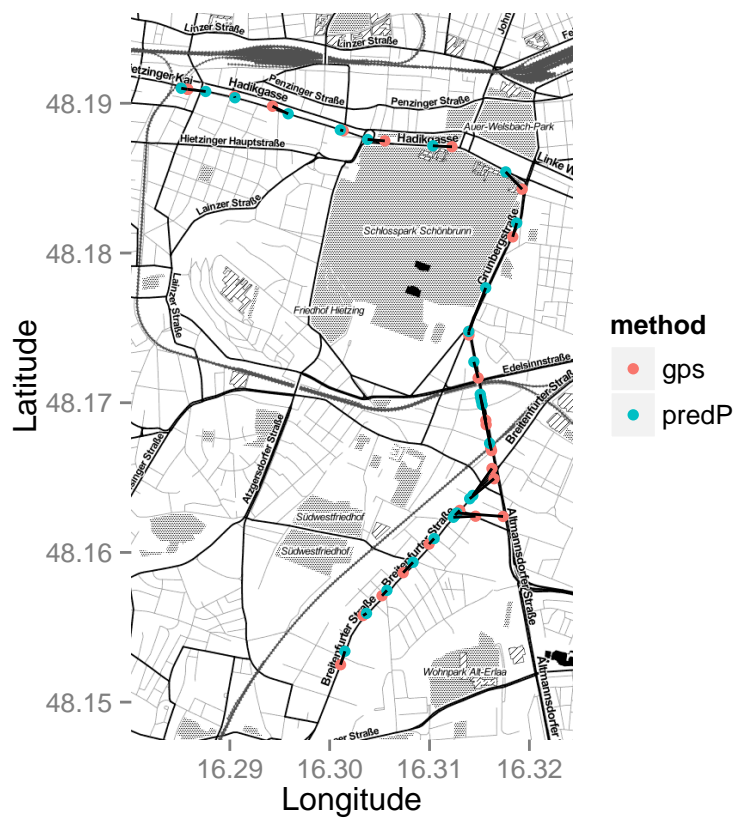
Handover estimation with buildings

```
##     Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    0.030   0.213   0.324   0.359   0.506   0.850
```
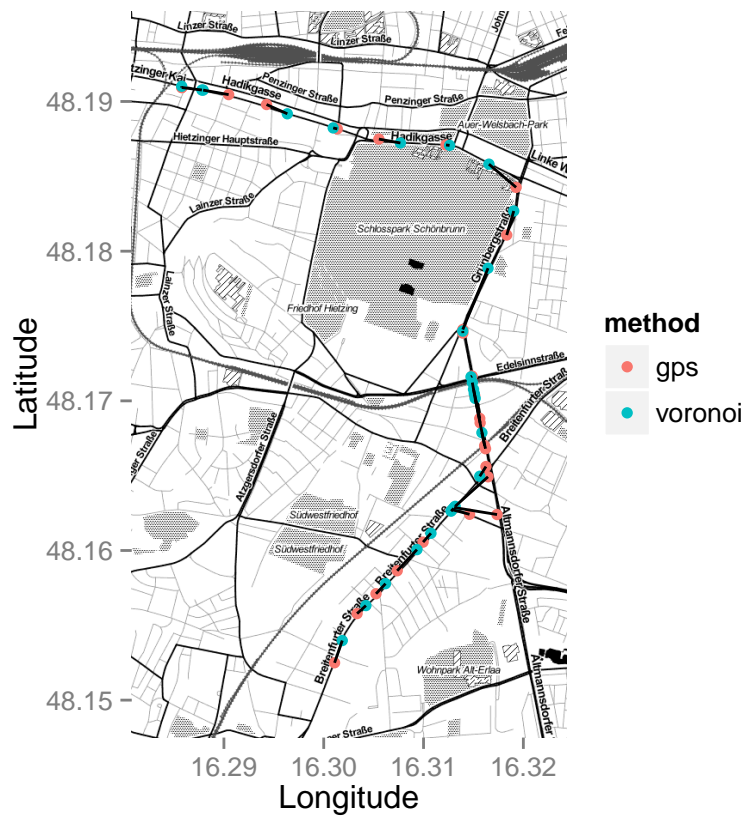

Handover estimation without buildings

```
##     Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    0.020   0.223   0.309   0.355   0.504   0.863
```

Handover estimation Voronoi diagrams

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.010   0.175   0.321   0.327   0.443   0.802
```
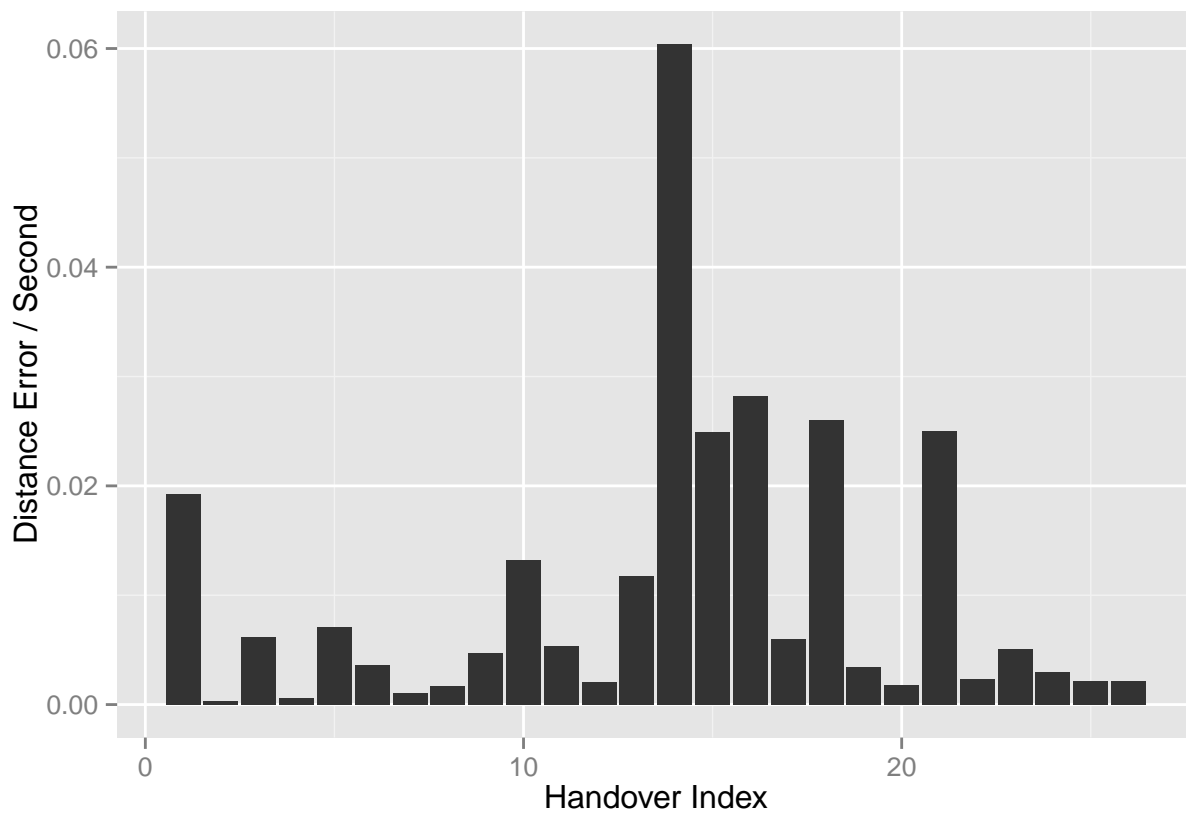
Handover deviation

```
## tikz output
##             2
```

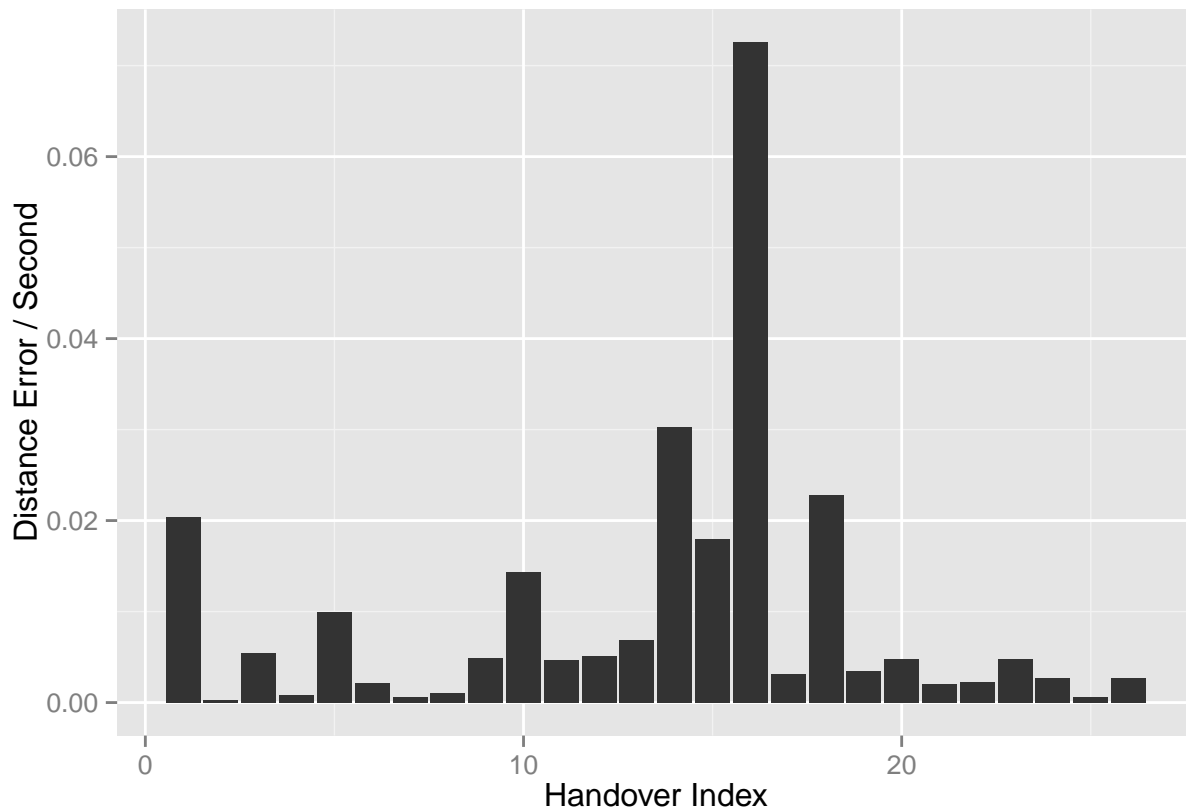## Handover difference prediction without buildings

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
## 0.0104  0.0520  0.1240  0.1310  0.1770  0.3460
```

Handover difference prediction with buildings

```
##     Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.0085  0.0638  0.1080  0.1240  0.1510  0.3540
```

Handover difference voronoi

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0095  0.0867  0.1510  0.1590  0.2180  0.4920
```

```
## tikz output
##              2
```

Deviation Comparison

```
##      predP             predPB            voronoi
##  Min.   :0.0104   Min.   :0.0085   Min.   :0.0095
##  1st Qu.:0.0520   1st Qu.:0.0638   1st Qu.:0.0867
##  Median :0.1235   Median :0.1080   Median :0.1506
##  Mean   :0.1315   Mean   :0.1242   Mean   :0.1593
##  3rd Qu.:0.1770   3rd Qu.:0.1510   3rd Qu.:0.2178
##  Max.   :0.3464   Max.   :0.3543   Max.   :0.4924
```

Difference between raw and adaption:

Summary of estimated speed without adaption

Coverage prediction without buildings

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##     1.6    22.3    35.7    76.5    54.0   625.0
```

Coverage prediction with buildings

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##     2.6    21.4    36.2    68.6    56.1   636.0
```

Voronoi diagrams

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##     0.4    15.4    30.7    88.1    65.7   906.0
```

```
## tikz output
##            2
```

Speed Comparison

```
##      predP          predPB          voronoi
##  Min.   :  1.6  Min.   :  2.6  Min.   :  0.4
##  1st Qu.: 22.3  1st Qu.: 21.4  1st Qu.: 15.4
##  Median : 35.7  Median : 36.2  Median : 30.7
##  Mean   : 76.5  Mean   : 68.6  Mean   : 88.1
##  3rd Qu.: 54.0  3rd Qu.: 56.1  3rd Qu.: 65.7
##  Max.   :624.9  Max.   :636.1  Max.   :905.9
```

Summary of estimated speed with adaption

Coverage prediction without buildings

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    1.62   26.00   38.90   39.70   50.00   81.20
```

Coverage prediction with buildings

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    2.63   21.60   44.80   38.30   50.00   70.00
```

Voronoi diagrams

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    0.86   23.40   42.00   38.20   50.00   78.60
```

```
## tikz output
##            2
```

Speed Adapt Comparison

```
##    predPAdapt       predPBAdapt      voronoiAdapt
##  Min.   : 1.62  Min.   : 2.63  Min.   : 0.86
##  1st Qu.:26.05  1st Qu.:21.56  1st Qu.:23.41
##  Median :38.90  Median :44.77  Median :41.96
```

```
## Mean    :39.73   Mean    :38.33   Mean    :38.18
## 3rd Qu.:50.00   3rd Qu.:50.00   3rd Qu.:50.00
## Max.    :81.20   Max.    :70.00   Max.    :78.56
```

Summary of speed errors without adaption:

Coverage prediction without buildings

```
##    Min. 1st Qu.  Median   Mean 3rd Qu.    Max.
##     1.4     9.2    14.8   58.4    27.5   581.0
```

Coverage prediction with buildings

```
##    Min. 1st Qu.  Median   Mean 3rd Qu.    Max.
##     2.0     9.1    12.9   48.1    22.3   592.0
```

Voronoi diagrams

```
##    Min. 1st Qu.  Median   Mean 3rd Qu.    Max.
##     1.1    12.5    20.4   72.7    36.2   862.0
```

```
## tikz output
##          2
```

Speed Error Comparison

```
##      predP           predPB          voronoi
##  Min.   : 1.4   Min.   : 2.0   Min.   : 1.1
##  1st Qu.: 9.2   1st Qu.: 9.1   1st Qu.: 12.5
##  Median : 14.8  Median : 12.9  Median : 20.4
##  Mean   : 58.4  Mean   : 48.1  Mean   : 72.7
##  3rd Qu.: 27.5  3rd Qu.: 22.3  3rd Qu.: 36.2
##  Max.   :580.5  Max.   :591.8  Max.   :861.5
```

Summary of speed errors with adaption:

Coverage prediction without buildings

```
##    Min. 1st Qu.  Median   Mean 3rd Qu.    Max.
##    1.42    6.67   10.70  17.10   25.40   55.00
```
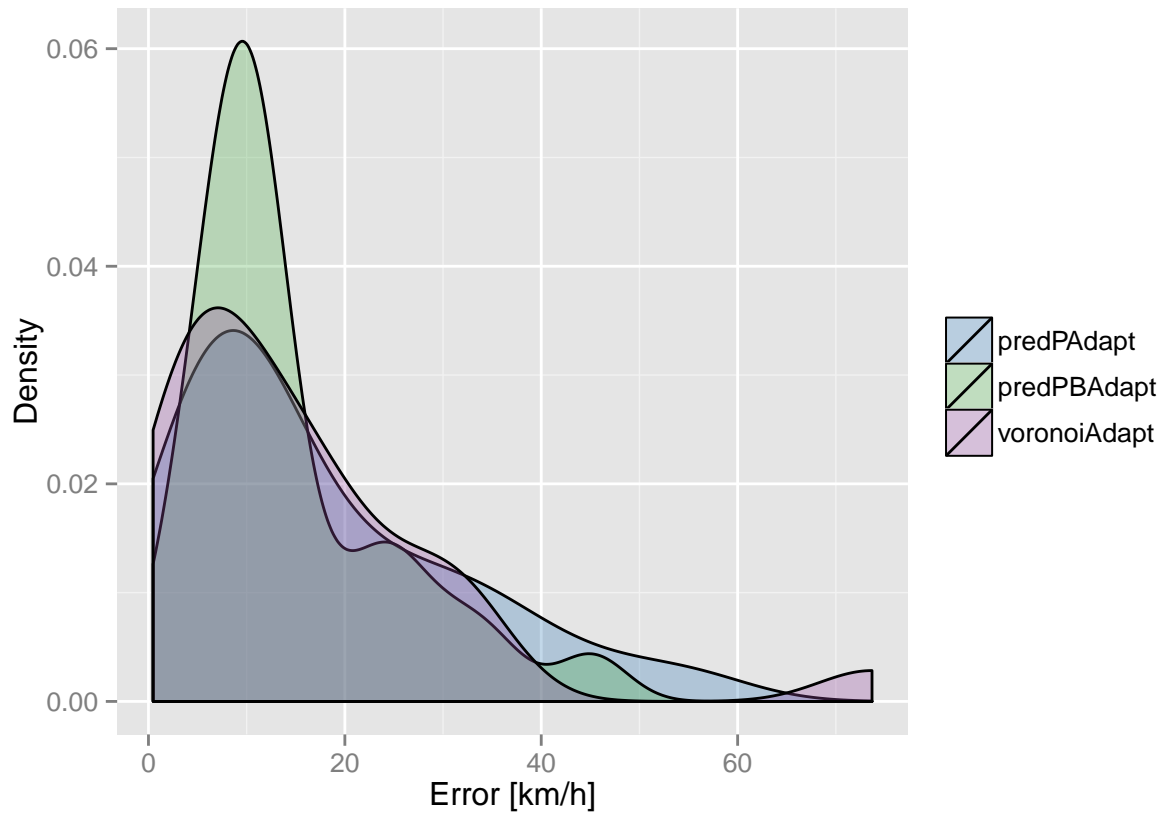
Coverage prediction with buildings

```
##    Min. 1st Qu.  Median   Mean 3rd Qu.    Max.
##    1.97    8.15   11.20  14.60   18.40   45.10
```

Voronoi diagrams

```
##    Min. 1st Qu.  Median   Mean 3rd Qu.    Max.
##    0.47    5.06   11.20  15.40   20.50   73.70
```

```
## tikz output
##            2
```


Speed Adapt Error Comparison

```
##    predPAdapt      predPBAdapt       voronoiAdapt
## Min.   : 1.42   Min.    : 1.97   Min.    : 0.47
## 1st Qu.: 6.67   1st Qu.: 8.15   1st Qu.: 5.06
## Median :10.70   Median :11.24   Median :11.19
## Mean   :17.08   Mean    :14.55   Mean    :15.39
## 3rd Qu.:25.40   3rd Qu.:18.38   3rd Qu.:20.51
## Max.   :55.03   Max.    :45.12   Max.    :73.68
```