Visualising and Analysing Running Tracks

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This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

Import Tracks

```
ddir1 <- "dat/2014-08-14-Running.gpx"
ddir2 <- "dat/2015-02-01-Running.gpx"

Tr1 <- getTr(ddir1)
Tr2 <- getTr(ddir2)
```

Get Statistics

```
## GetStats
getStats(Tr1)
```

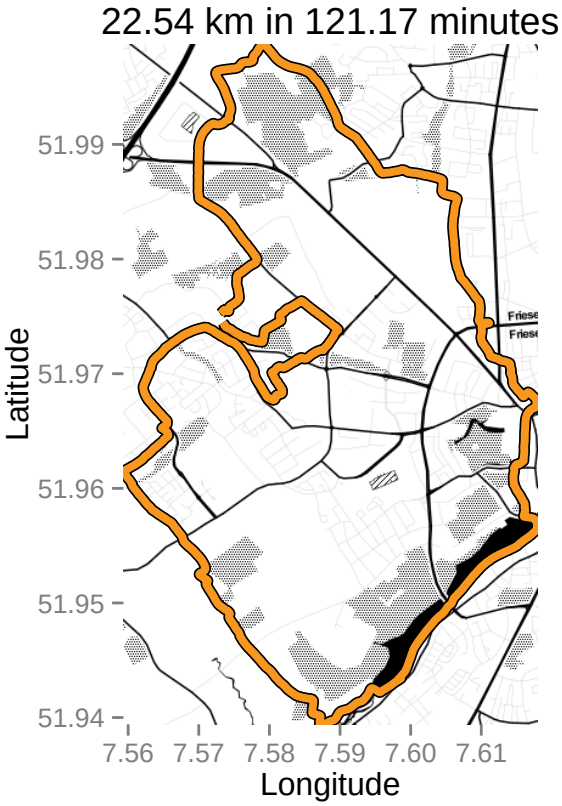
```
##         Date Start   End   Meters Minutes min/km SpeedMax[km/h]
## 1 2014-08-14 15:30 16:46 14398.35   76.53   5.32          20.02
##   Temperature[?C] Humidity[%]          Weather-Description Windspeed[m/s]
## 1           14.65          87 thunderstorm with light rain            2.6
##   Pressure[hPa]
## 1          1009
```

```
getStats(Tr2)
```

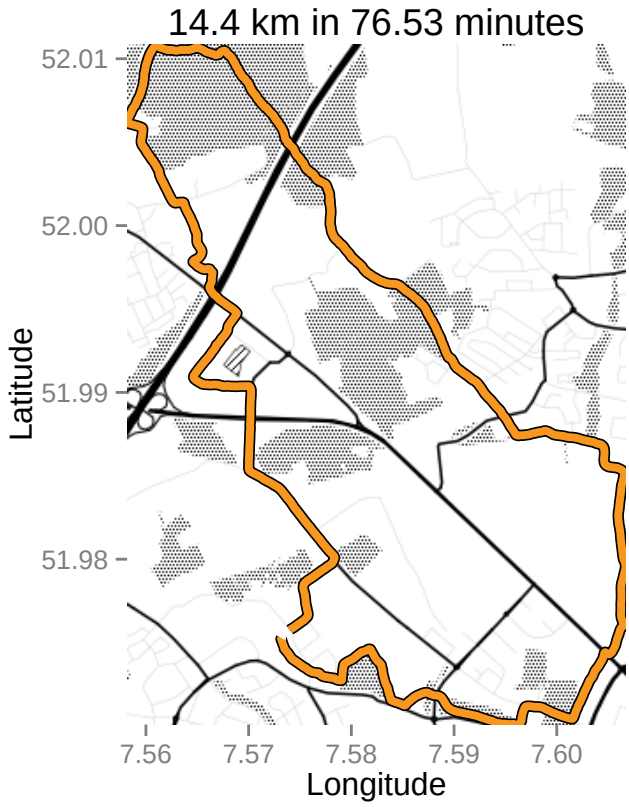
```
##         Date Start   End   Meters Minutes min/km SpeedMax[km/h]
## 1 2015-02-01 11:16 13:17 22535.05  121.17   5.38          28.31
##   Temperature[?C] Humidity[%] Weather-Description Windspeed[m/s]
## 1            3.73        88.5       broken clouds           2.42
##   Pressure[hPa]
## 1       1004.27
```

Plot Track on a Map

```
## Plot with Basic Map
df <- as.data.frame(Tr2@sp@coords)
x <- df[,1]
y <- df[,2]
plotMap(Tr2, x, y)
```

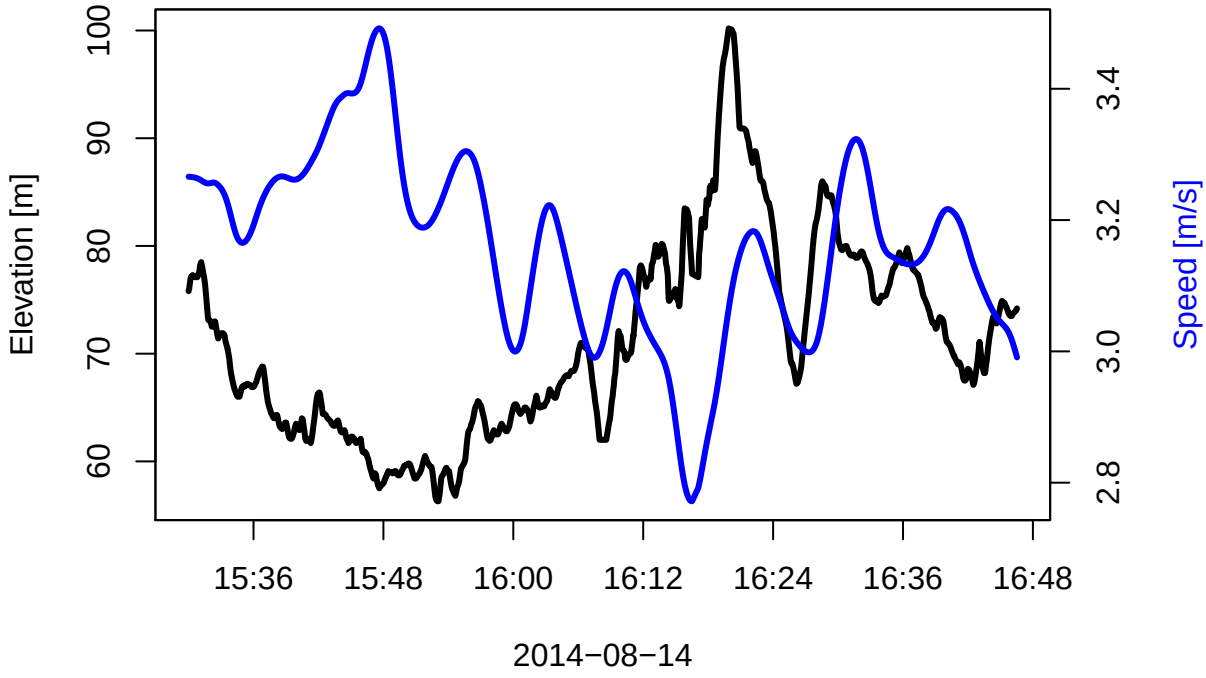



```
df <- as.data.frame(Tr1@sp@coords)
x <- df[,1]
y <- df[,2]
plotMap(Tr1, x, y)
```

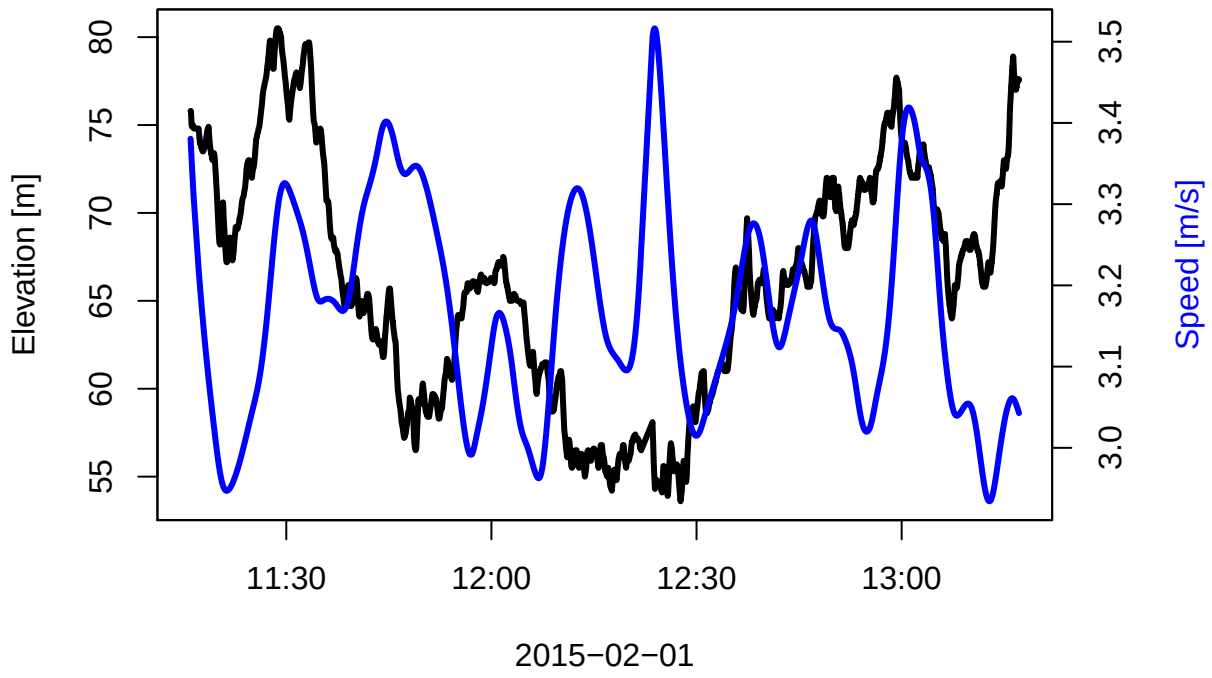


Plot Elevation with Speed

```
plotEleSpeed (Tr1)
```




```
plotEleSpeed (Tr2)
```



Calculate Slope

```
calculateSlope(Tr1)
```

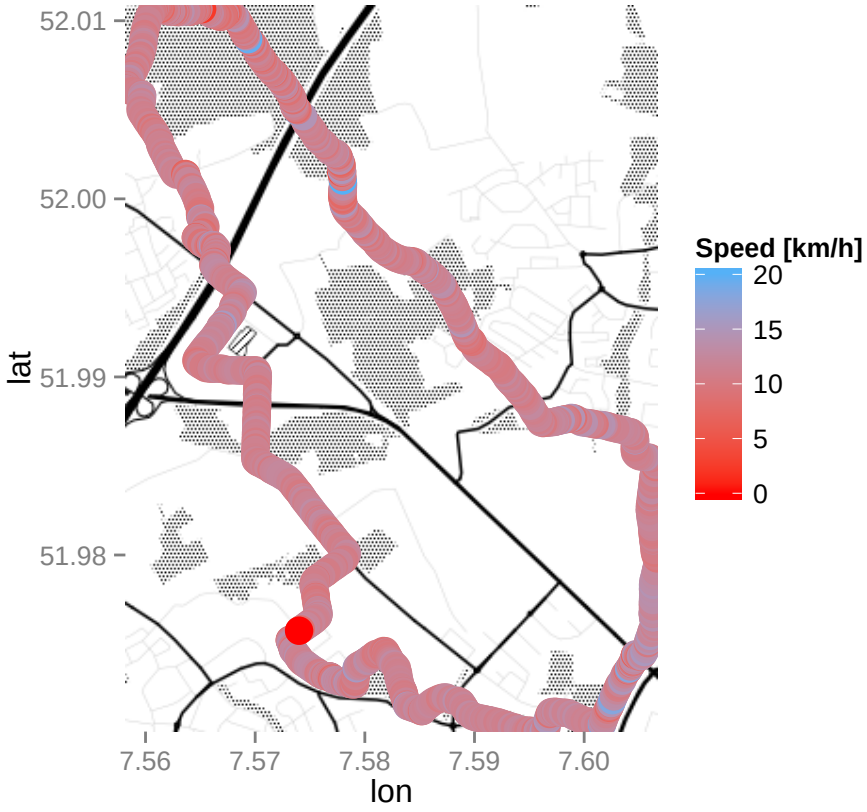
```
##    distance [metres] slope [%]
## 1            1934.04     -0.65
## 2             450.22      0.40
## 3            1374.69     -0.45
## 4             192.85      0.36
## 5             495.10     -0.26
## 6            2435.24      0.41
## 7             517.27     -1.24
## 8             970.38      1.88
## 9             134.32     -3.95
## 10            930.86      2.71
## 11           1079.48     -2.95
## 12            629.76      2.57
## 13            913.16     -1.01
## 14            360.59      0.92
## 15           1139.87     -0.88
## 16            840.51      0.67
```

```
calculateSlope(Tr2)
```

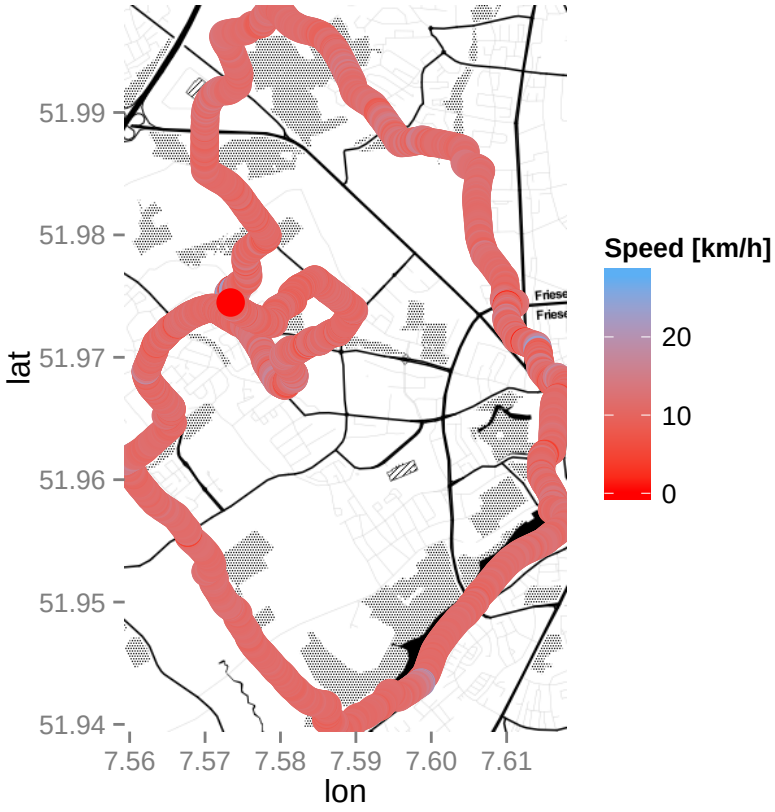
```
##    distance [metres] slope [%]
## 1             932.26     -0.79
## 2            1462.67      0.72
## 3            3871.21     -0.53
## 4            2058.53      0.39
## 5            3148.41     -0.37
## 6             536.30      0.17
## 7             628.79     -0.24
## 8            2764.68      0.42
## 9             221.16     -0.90
## 10           1811.02      0.43
## 11            352.62     -1.05
## 12           1238.25      0.61
## 13            757.62     -0.46
## 14             99.56      1.71
## 15            915.23     -0.97
## 16            488.57      0.72
## 17            287.85     -0.80
## 18            960.31      1.21
```

Plot Speed on a Map

```
plotSpeed(Tr1)
```




```
plotSpeed(Tr2)
```



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.