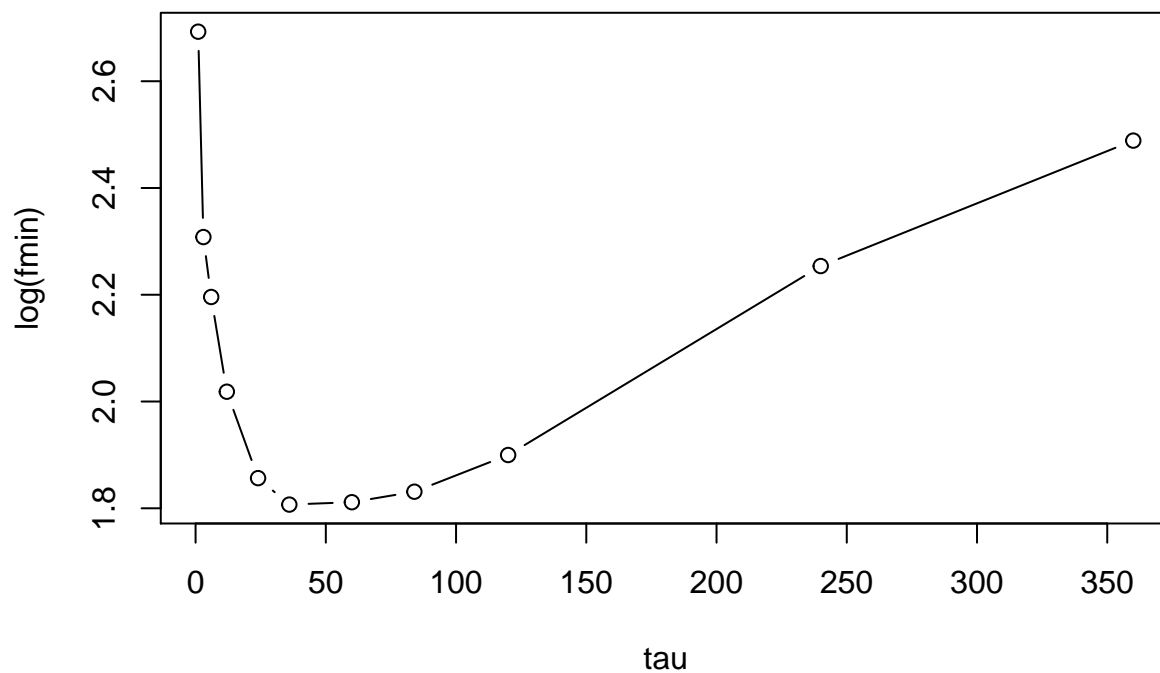# Untitled

```r
library('fBonds')
```

```
## Warning: package 'fBonds' was built under R version 3.4.2

## Loading required package: timeDate

## Warning: package 'timeDate' was built under R version 3.4.3

## Warning in as.POSIXlt.POSIXct(Sys.time()): unknown timezone 'zone/tz/2018i.
## 1.0/zoneinfo/Asia/Shanghai'

## Loading required package: timeSeries

## Warning: package 'timeSeries' was built under R version 3.4.2

## Loading required package: fBasics

## Warning: package 'fBasics' was built under R version 3.4.2
```

```r
Yield = as.numeric(read.csv('../data/select_table.txt',sep = ',',row.names = 1)[1,])
Maturity = c(0, 2,5,11,23,35,59,83,119,239,359)+1
Maturity
```

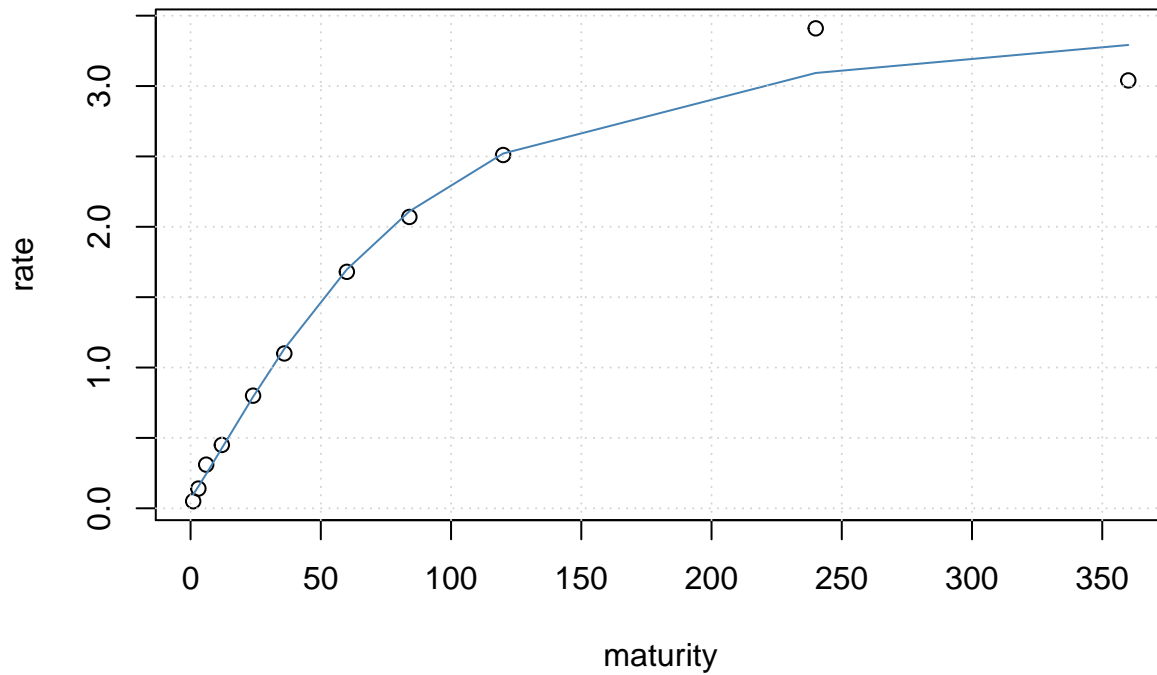```
[1]   1   3   6 12 24 36 60 84 120 240 360
```

```r
Yield
```

```
## [1] 0.05 0.14 0.31 0.45 0.80 1.10 1.68 2.07 2.51 3.41 3.04
```

```r
NelsonSiegel(Yield,
            Maturity,doplot =TRUE)
```

OLS: Nelson–Siegel

Nelson–Siegel
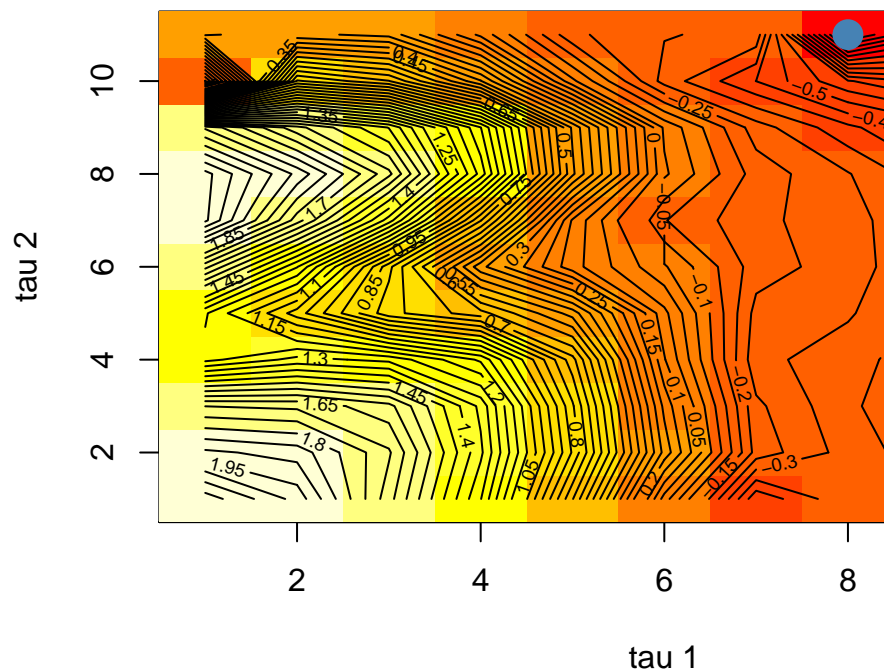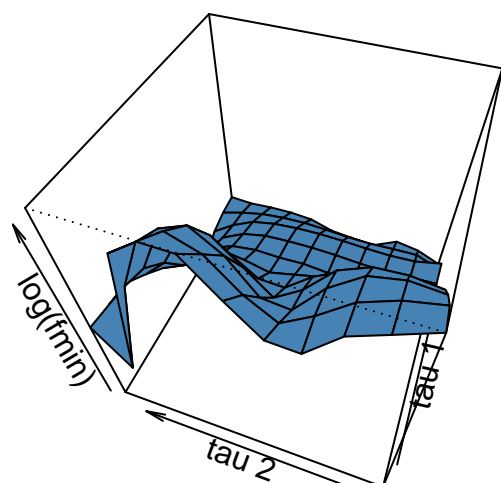


```
## $par
##     beta0      beta1      beta2       tau1
##  3.690042 -3.620591 -2.266647 24.346940
##
## $objective
## [1] 0.1745088
##
## $convergence
## [1] 0
##
## $iterations
## [1] 17
##
## $evaluations
## function gradient
##       25       87
##
## $message
## [1] "relative convergence (4)"
```
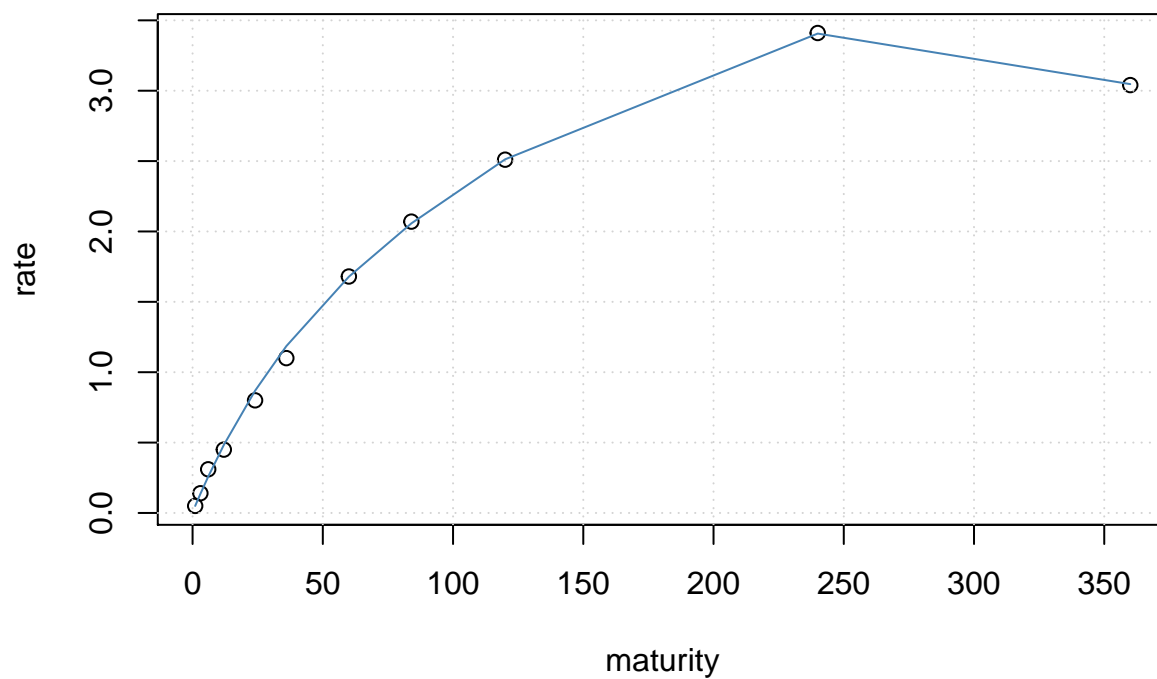
```
Svensson(Yield, Maturity,doplot=TRUE)
```

OLS: Nelson–Siegel–Svensson

OLS: Nelson–Siegel–Svensson

Nelson–Siegel–Svensson


```
## $par
##     beta0    beta1     beta2     beta3      tau1      tau2
## -20.88281 20.88888   9.98873  62.66161  84.02785 359.98924
##
## $objective
## [1] 0.2708389
```

```
## 
## $convergence
## [1] 1
## 
## $iterations
## [1] 23
## 
## $evaluations
## function gradient
##       50      162
## 
## $message
## [1] "false convergence (8)"
```

```
Svensson(Yield, Maturity,doplot=FALSE)$par
```

```
##     beta0     beta1     beta2     beta3      tau1      tau2
## -20.88281  20.88888   9.98873  62.66161  84.02785 359.98924
```