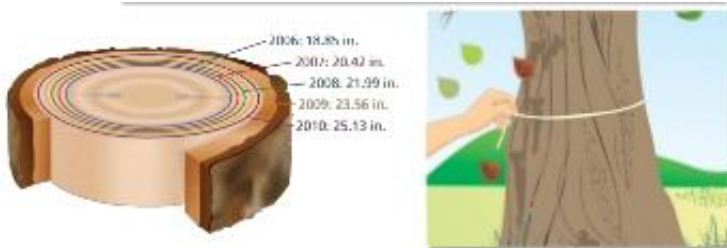


Project: Developing Data Products

Author: Sachin Singh Date: 10/21/2015

Dataset: Growth of Orange Trees



Description

The data describe the growth of orange trees (Table 1, Figure 1). The trunk circumference of 5 trees is measured at 7 different ages, giving a total of 35 datapoints. The Orange data object is among the core datasets that come with R. This dataset was originally part of package nlme, and that has methods (including for [, as.data.frame, plot and print) for its grouped-data classes. Source: Draper, N. R. and Smith, H. (1998), Applied Regression Analysis (3rd ed), Wiley (exercise 24.N). & Pinheiro, J. C. and Bates, D. M. (2000) Mixed-effects Models in S and S-PLUS, Springer.

Data Format:

Tree - An ordered factor indicating the tree on which the measurement is made. The ordering is according to increasing maximum diameter.

age - A numeric vector giving the age of the tree (days since 1968/12/31)

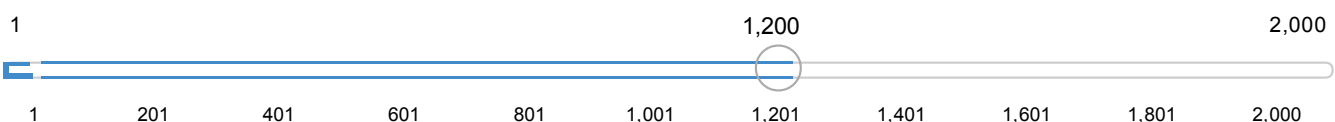
circumference - A numeric vector of trunk circumferences (mm). This is probably circumference at breast height, a standard measurement in forestry.

We used self-starting SSlogis() function available in R, specifically for fitting logistic models. Using the SSlogis() function speeds up the fit by about 15%, because in addition to providing initial conditions SSlogis() also returns an analytically computed gradient of the sum-of-squares function.

Select Data:

- ☐ Tree 1
- ☐ Tree 2
- ☒ Tree 3
- ☐ Tree 4
- ☐ Tree 5
- ☐ All Trees

Tree Age in days: (Apply Predict function)

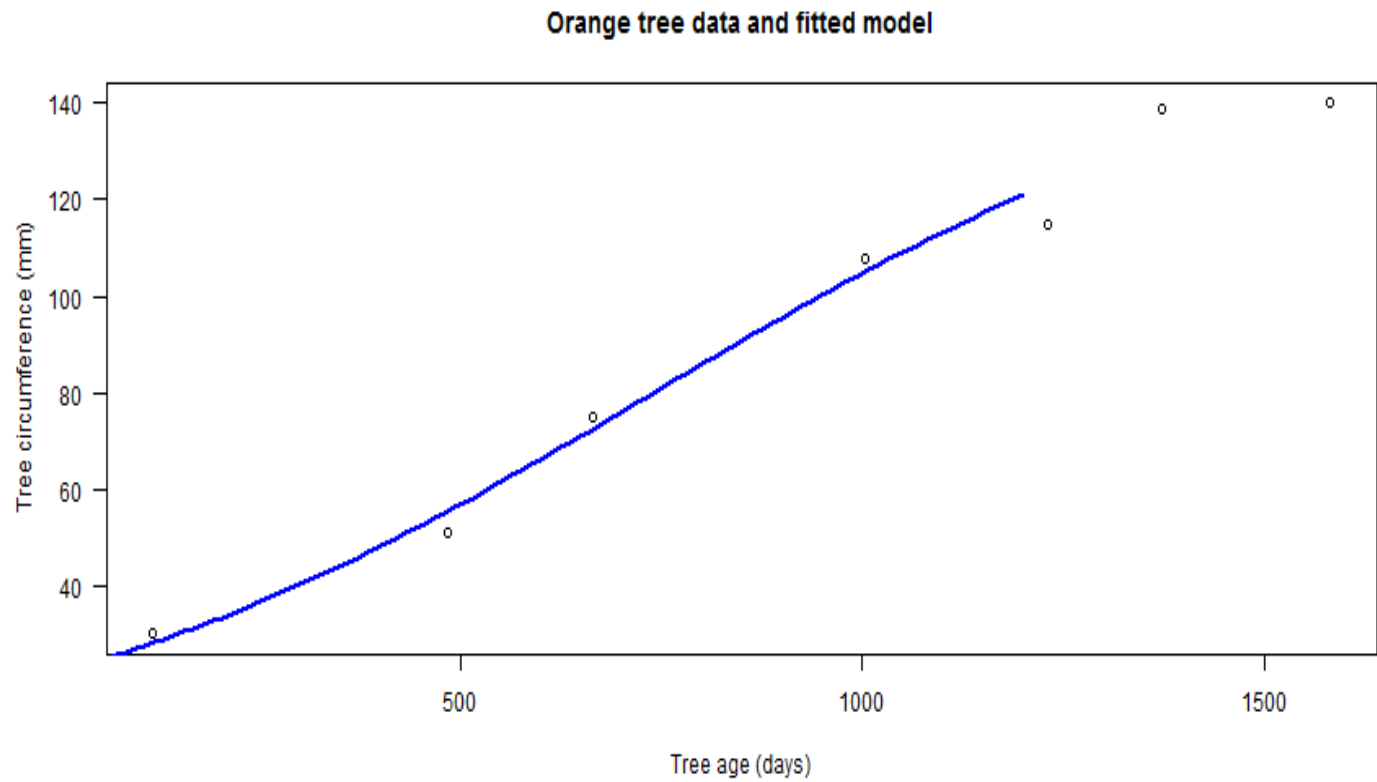


Output

Plot

Summary

selfStart Model



Inputs

Tree No

```
[1] "3"
```

Tree Age (days)

```
[1] 1200
```