lme4 (version 1.1-35.5)

sleepstudy: Reaction times in a sleep deprivation study

Description

The average reaction time per day (in milliseconds) for subjects in a sleep deprivation study.

Days 0-1 were adaptation and training (T1/T2), day 2 was baseline (B); sleep deprivation started after day 2.

Arguments

Format

A data frame with 180 observations on the following 3 variables.

`Reaction`	Average reaction time (ms)
`Days`	Number of days of sleep deprivation
`Subject`	Subject number on which the observation was made.

Details

These data are from the study described in Belenky et al. (2003), for the most sleep-deprived group (3 hours time-in-bed) and for the first 10 days of the study, up to the recovery period. The original study analyzed speed (1/(reaction time)) and treated day as a categorical rather than a continuous predictor.

References

Gregory Belenky, Nancy J. Wesensten, David R. Thorne, Maria L. Thomas, Helen C. Sing, Daniel P. Redmond, Michael B. Russo and Thomas J. Balkin (2003) Patterns of performance degradation and restoration during sleep restriction and subsequent recovery: a sleep dose-response study. *Journal of Sleep Research* **12**, 1--12.

Examples

Run this code

```
str(sleepstudy)
require(lattice)
xyplot(Reaction ~ Days | Subject, sleepstudy, type = c("g","p","r"),
       index = function(x,y) coef(lm(y ~ x))[1],
       xlab = "Days of sleep deprivation",
       ylab = "Average reaction time (ms)", aspect = "xy")
(fm1 <- lmer(Reaction ~ Days + (Days|Subject), sleepstudy, subset=Days>=2))
## independent model
(fm2 <- lmer(Reaction ~ Days + (1|Subject) + (0+Days|Subject), sleepstudy, subset=Days>=2))
```

Run the code above in your browser using DataLab