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## Plot a best fit line R [duplicate]

This question already has an answer here:

[How to fit a smooth curve to my data in R?](#) 6 answers

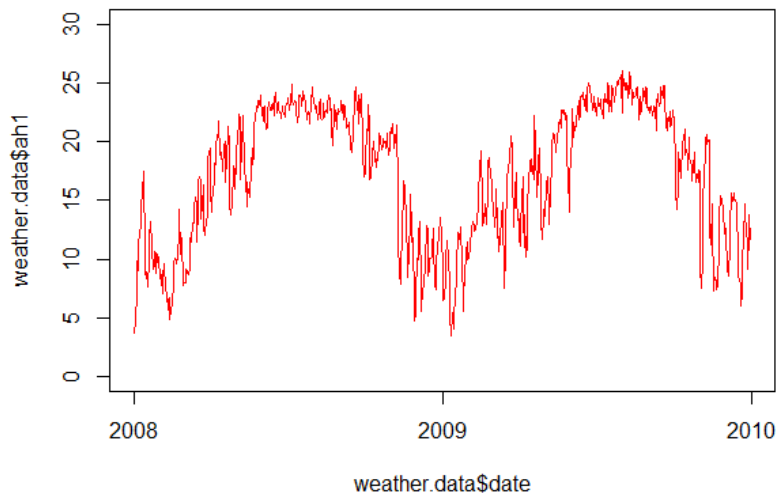
Right now i have a large data set with temperature going up and down all the time. I want to smoothen my data and plot the best fit line with all the temperature,

Here is the data:

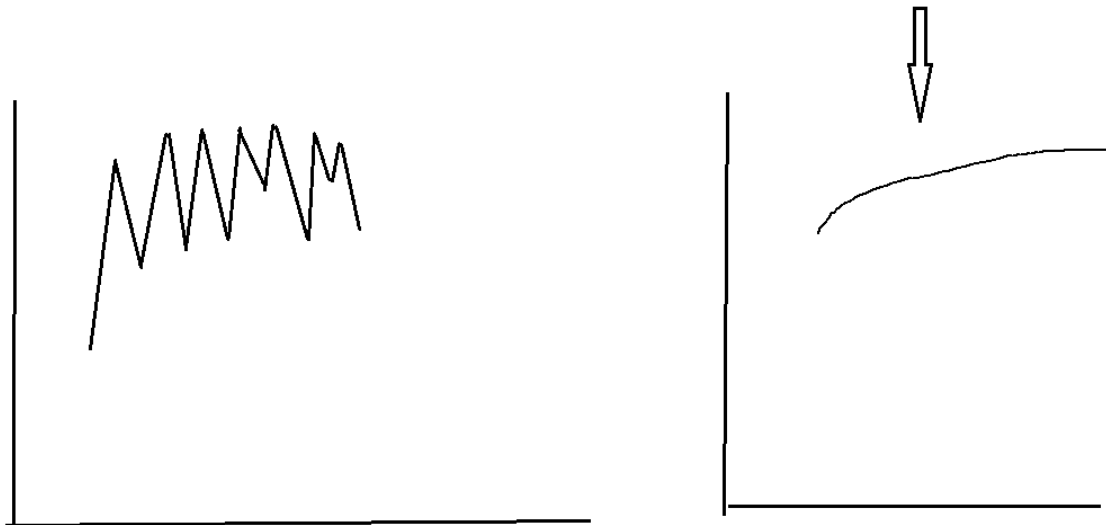
```
weather.data
  date      mtemp
1  2008-01-01  12.9
2  2008-01-02  12.9
3  2008-01-03  14.5
4  2008-01-04  15.7
5  2008-01-05  17.0
6  2008-01-06  17.8
7  2008-01-07  20.2
8  2008-01-08  20.8
9  2008-01-09  21.4
10 2008-01-10  20.8
11 2008-01-11  21.4
12 2008-01-12  22.0
```

and so on..... til 2009 Dec 31

My current graph looks like this and my data fit a regression like either the running average or loess:



However, when I tried to fit it with the running average, it became like this:



Here is my code.

```
plot(weather.data$date,weather.data$mtemp,ylim=c(0,30),type='l',col="orange")
par(new=TRUE)
```

Could anyone give me a hand?

[r](#) [plot](#) [best-fit-curve](#)

edited Feb 17 at 17:47



Uwe

9,719 ● 5 ● 22 ● 45

asked Aug 13 '14 at 10:04



londwwq1

37 ● 1 ● 2 ● 7

marked as duplicate by [Uwe](#), [beetroot](#), [Roman Luštrik](#) ● [r](#) Feb 20 at 14:37

This question has been asked before and already has an answer. If those answers do not fully address your question, please [ask a new question](#).

You need to be more specific. How do you want to smooth your data? Moving average, exponential smoothing, or something else? – [Anders Ellem Bilgrau](#) Aug 13 '14 at 10:21

## 1 Answer

Depending on your actual data and how you want to smooth it, and why you want to smooth it there are various options.

I am showing you examples with linear regression (first and second order) and local regression (LOESS). These may or may not be the good statistical models to use for your data, but it is difficult to tell without seeing it. In any case:

```
time <- 0:100
temp <- 20+ 0.01 * time^2 + 0.8 * time + rnorm(101, 0, 5)

# Generate first order Linear model
lin.mod <- lm(temp~time)

# Generate second order Linear model
lin.mod2 <- lm(temp~I(time^2)+time)

# Calculate Local regression
ls <- loess(temp~time)

# Predict the data (passing only the model runs the prediction
# on the data points used to generate the model itself)
pr.lm <- predict(lin.mod)
pr.lm2 <- predict(lin.mod2)
pr.loess <- predict(ls)

par(mfrow=c(2,2))
plot(time, temp, "l", las=1, xlab="Time", ylab="Temperature")
lines(pr.lm~time, col="blue", lwd=2)

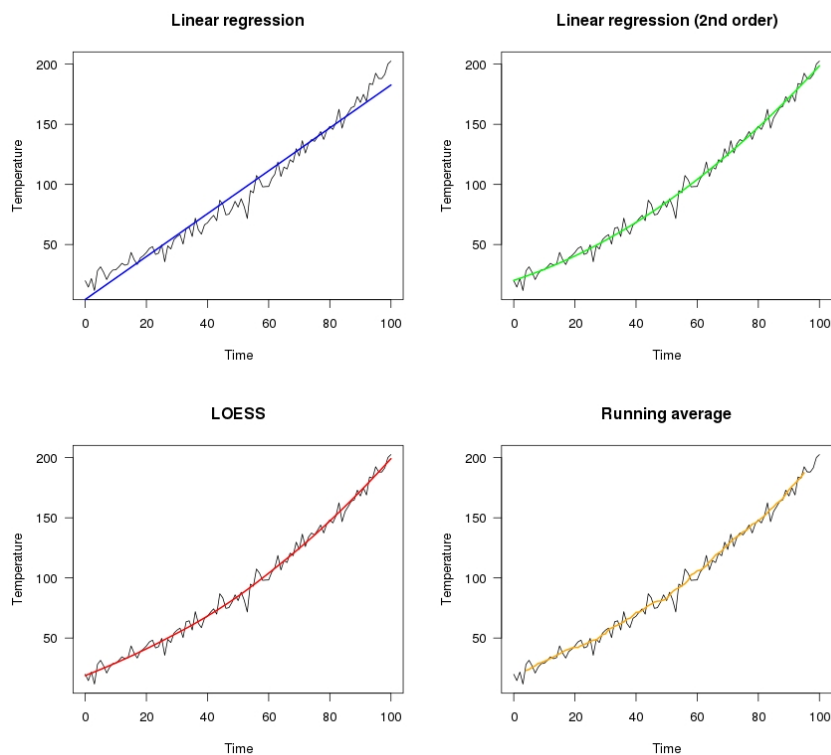
plot(time, temp, "l", las=1, xlab="Time", ylab="Temperature")
lines(pr.lm2~time, col="green", lwd=2)

plot(time, temp, "l", las=1, xlab="Time", ylab="Temperature")
lines(pr.loess~time, col="red", lwd=2)
```

Another option would be to use a moving average.

For instance:

```
library(zoo)
mov.avg <- rollmean(temp, 5, fill=NA)
plot(time, temp, "l")
lines(time, mov.avg, col="orange", lwd=2)
```



edited Aug 13 '14 at 10:30

answered Aug 13 '14 at 10:25



nico

34k ● 8 ● 60 ● 92

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[2]: [i.stack.imgur.com/KZWWx.png](http://i.stack.imgur.com/KZWWx.png) – [londwwq1](#) Aug 13 '14 at 19:18

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my current graph look like this and my data fit a regression like either the running average or loess... – [londwwq1](#) Aug 13 '14 at 19:19

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however, when i tried to fit it with the running average, it became like this..... [i.stack.imgur.com/d9LMc.png](http://i.stack.imgur.com/d9LMc.png) – [londwwq1](#) Aug 13 '14 at 19:20

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it didnt fit really well.. and when i tried with loess, there were some error messages. > ls <- loess(weather.data\$mtemp~weather.data\$date) Error in simpleLoess(y, x, w, span, degree, parametric, drop.square, normalize, : NA/NaN/Inf in foreign function call (arg 2) In addition: Warning message: In simpleLoess(y, x, w, span, degree, parametric, drop.square, normalize, : NAs introduced by coercion – [londwwq1](#) Aug 13 '14 at 19:21

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is it because i have actual date for time? – [londwwq1](#) Aug 13 '14 at 19:39

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