

mgp tag in par()

Changing the spacing of axis labels using the `mgp` tag

```
mgp=c(3, 1, 0)
```

Positions of axis components. The first component is the distance from the axis label to the axis position, in text lines. The second component is the distance to the tick labels, and the final component is the distance from the axis position to the axis line (usually zero). Positive numbers measure outside the plot region, negative numbers inside.
(from *An Introduction to R*, online help document)

```
> par()$mgp
[1] 3 1 0
>
```

Plot with `mgp` default

```
pdf(file="mean.plot.margins.pdf",height=8, width=10)

### bottom is 2, left is 2, top is 1.5, right is 1
par(mai=c(2,2,1.5,1))

plot(dat$age,dat$income,xlab="Age", xlim=c(20,60),pch=20,
      ylim=c(-2000,14000), ylab="Income in Thousands",yaxt="n")

axis(side=2,at=seq(from=-2000,to=14000,by=2000),
      labels=seq(from=-2,to=14,by=2),las=1)

text(x=mean.age, y=mean.income, labels=region, col="blue", cex=0.8, font=2)

dev.off()
```

What happens when everything is 0, `mgp=c(0,0,0)`?

```
pdf(file="mean.plot.spacing0.pdf",height=8, width=10)

### (bottom,left,top,right) (axis label,tick labels, axis line)
par(mai=c(2,2,1.5,1),mgp=c(0,0,0))

plot(dat$age,dat$income,xlab="Age", xlim=c(20,60),pch=20,
      ylim=c(-2000,14000), ylab="Income in Thousands",yaxt="n")

axis(side=2,at=seq(from=-2000,to=14000,by=2000),
      labels=seq(from=-2,to=14,by=2),las=1)

text(x=mean.age, y=mean.income, labels=region, col="blue", cex=0.8, font=2)

dev.off()
```

What happens when everything is +1 relative to default, `mgp=c(4,2,1)`?

```
pdf(file="mean.plot.spacing1.pdf",height=8, width=10)

### (bottom,left,top,right) (axis label,tick labels, axis line)
par(mai=c(2,2,1.5,1),mgp=c(4,2,1))

plot(dat$age,dat$income,xlab="Age", xlim=c(20,60),pch=20,
      ylim=c(-2000,14000), ylab="Income in Thousands",yaxt="n")

axis(side=2,at=seq(from=-2000,to=14000,by=2000),
      labels=seq(from=-2,to=14,by=2),las=1)

text(x=mean.age, y=mean.income, labels=region, col="blue", cex=0.8, font=2)

dev.off()
```

Putting axis labels next to tick mark labels, `mgp=c(3,2,1)`?

```
pdf(file="mean.plot.spacing2.pdf",height=8, width=10)

### (bottom,left,top,right) (axis label,tick labels, axis line)
par(mai=c(2,2,1.5,1),mgp=c(3,2,1))

plot(dat$age,dat$income,xlab="Age", xlim=c(20,60),pch=20,
      ylim=c(-2000,14000), ylab="Income in Thousands",yaxt="n")

axis(side=2,at=seq(from=-2000,to=14000,by=2000),
      labels=seq(from=-2,to=14,by=2),las=1)

text(x=mean.age, y=mean.income, labels=region, col="blue", cex=0.8, font=2)

dev.off()
```

What happens when use negative numbers, `mgp=c(-3,-2,-1)`?

```
pdf(file="mean.plot.spacing3.pdf",height=8, width=10)

### (bottom,left,top,right) (axis label,tick labels, axis line)
par(mai=c(2,2,1.5,1),mgp=c(-3,-2,-1))

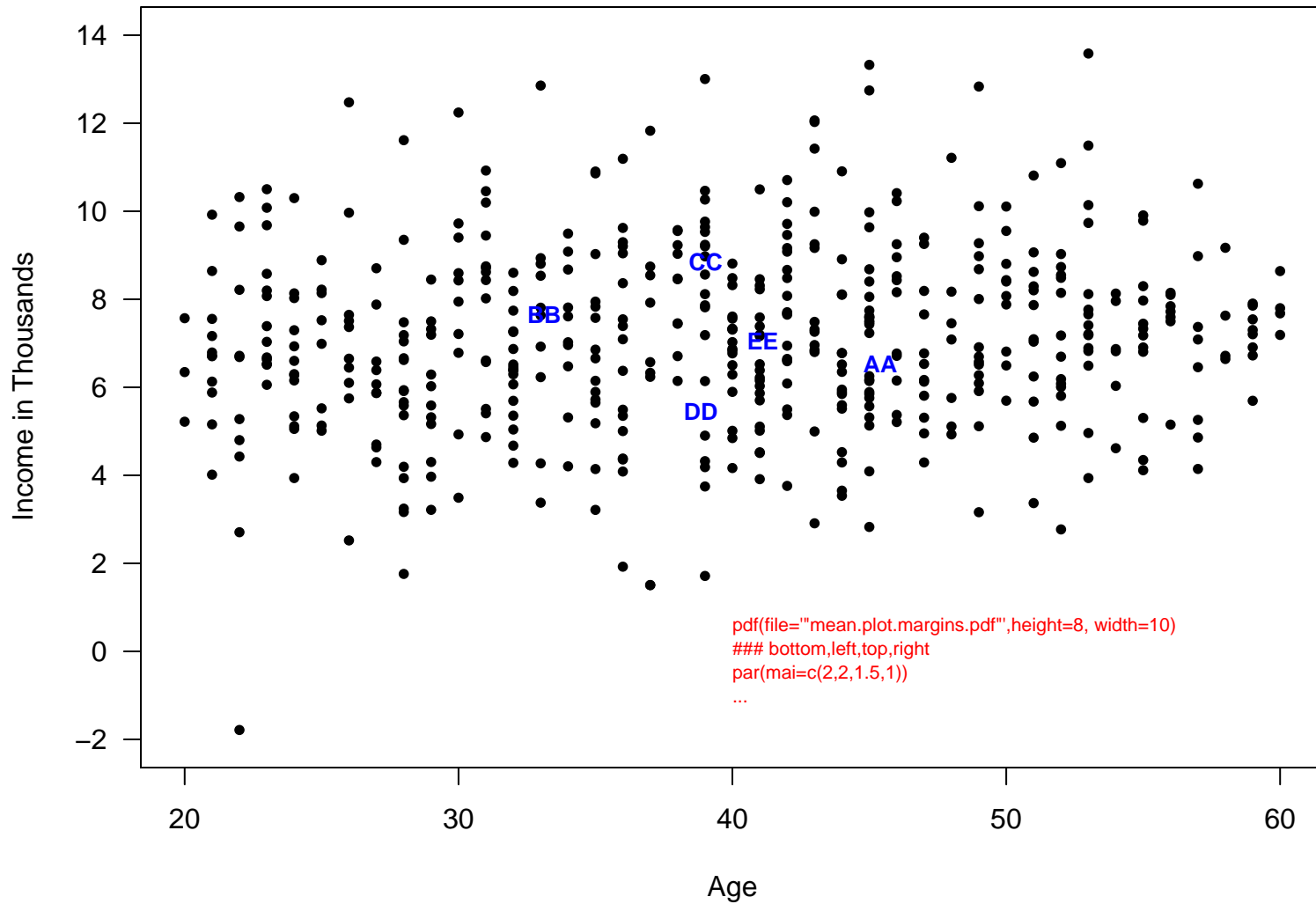
plot(dat$age,dat$income,xlab="Age", xlim=c(20,60),pch=20,
      ylim=c(-2000,14000), ylab="Income in Thousands",yaxt="n")

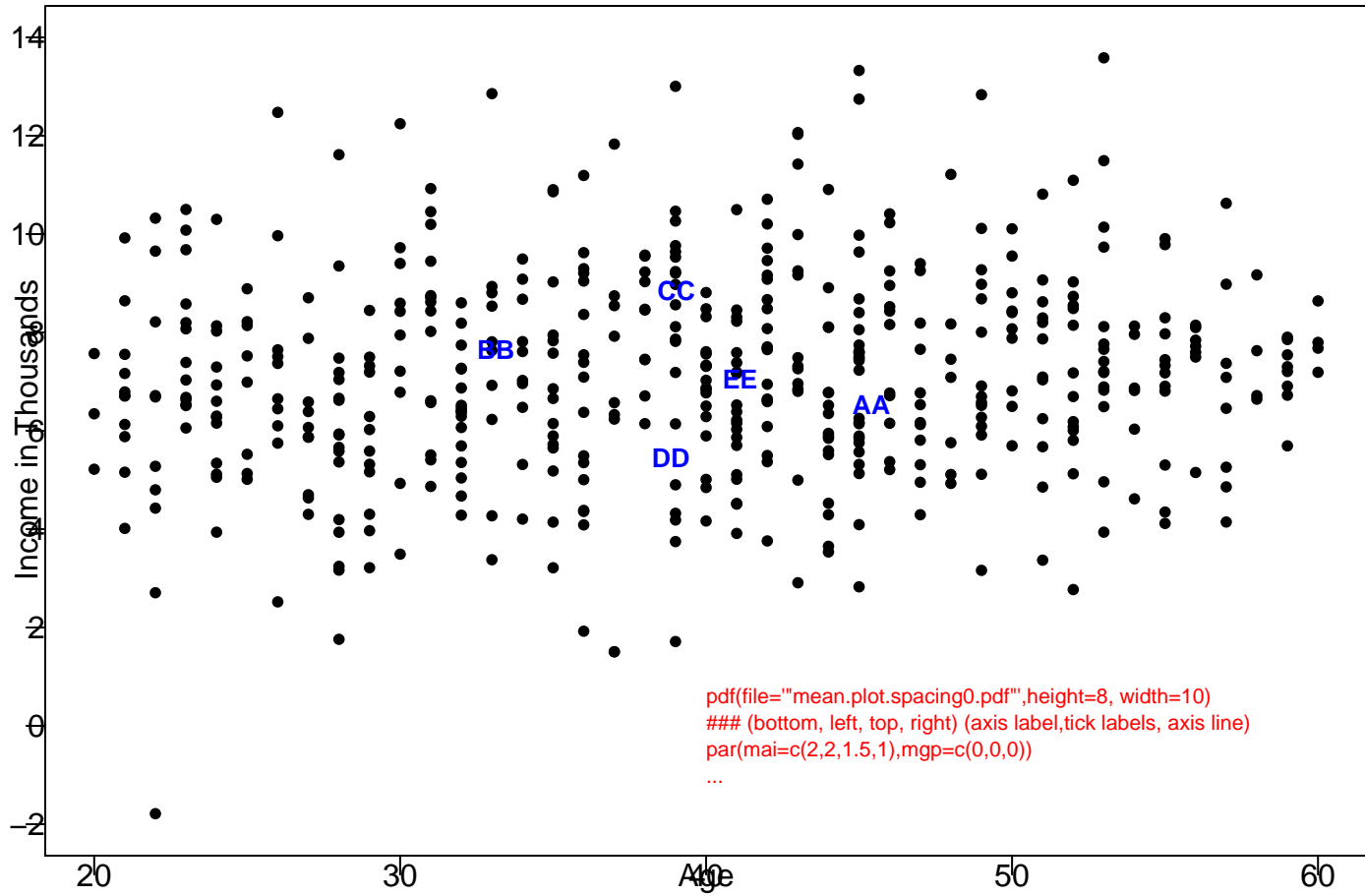
axis(side=2,at=seq(from=-2000,to=14000,by=2000),
      labels=seq(from=-2,to=14,by=2),las=1)

text(x=mean.age, y=mean.income, labels=region, col="blue", cex=0.8, font=2)

dev.off()
```

Annotated plots follow:





```
pdf(file="mean.plot.spacing0.pdf",height=8, width=10)  
### (bottom, left, top, right) (axis label,tick labels, axis line)  
par(mai=c(2,2,1.5,1),mgp=c(0,0,0))  
...
```

