Gráficos con R

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Contenidos

Base y grid

En `R` existen dos formas de generar gráficos:

- Base graphics
- Grid graphics

Dentro del conjunto `grid` existen dos grandes paquetes:

- `lattice`
- `ggplot2`

Conjunto de datos de ejemplo

- Leemos desde el archivo local

```
aranjuez <- read.csv('data/aranjuez.csv')

summary(aranjuez)
```

```
         X          TempAvg          TempMax          TempMin
2004-01-01:   1   Min.   :-5.309   Min.   :-2.362   Min.   :-12.980
2004-01-02:   1   1st Qu.: 7.692   1st Qu.:14.530   1st Qu.:  1.515
2004-01-03:   1   Median :13.810   Median :21.670   Median :  7.170
2004-01-04:   1   Mean   :14.405   Mean   :22.531   Mean   :  6.888
2004-01-05:   1   3rd Qu.:21.615   3rd Qu.:30.875   3rd Qu.: 12.590
2004-01-06:   1   Max.   :30.680   Max.   :41.910   Max.   : 22.710
(Other)   :2892                                    NA's   :4
   HumidAvg         HumidMax         WindAvg          WindMax
Min.   : 19.89   Min.   : 35.88   Min.   :0.251   Min.   : 0.000
1st Qu.: 47.04   1st Qu.: 81.60   1st Qu.:0.667   1st Qu.: 3.783
Median : 62.58   Median : 90.90   Median :0.920   Median : 5.027
Mean   : 62.16   Mean   : 87.22   Mean   :1.174   Mean   : 5.208
3rd Qu.: 77.38   3rd Qu.: 94.90   3rd Qu.:1.431   3rd Qu.: 6.537
Max.   :100.00   Max.   :100.00   Max.   :8.260   Max.   :10.000
                 NA's   :13       NA's   :8       NA's   :128
     Rain           Radiation           ET
Min.   : 0.000   Min.   : 0.277   Min.   :0.000
1st Qu.: 0.000   1st Qu.: 9.370   1st Qu.:1.168
Median : 0.000   Median :16.660   Median :2.758
Mean   : 1.094   Mean   :16.742   Mean   :3.091
3rd Qu.: 0.200   3rd Qu.:24.650   3rd Qu.:4.926
Max.   :49.730   Max.   :32.740   Max.   :8.564
NA's   :4        NA's   :13       NA's   :18
```

Conjunto de datos de ejemplo

-Añadimos algunas columnas

```
aranjuez$month <- as.numeric(format(as.Date(aranjuez$
    X), '%m'))
aranjuez$year <- as.numeric(format(as.Date(aranjuez$X
    ), '%Y'))
aranjuez$day <- as.numeric(format(as.Date(aranjuez$X)
    , '%j'))
aranjuez$jday <- julian(as.Date(aranjuez$X))
aranjuez$quarter <- quarters(as.Date(aranjuez$X))
```

Contenidos

Documentación

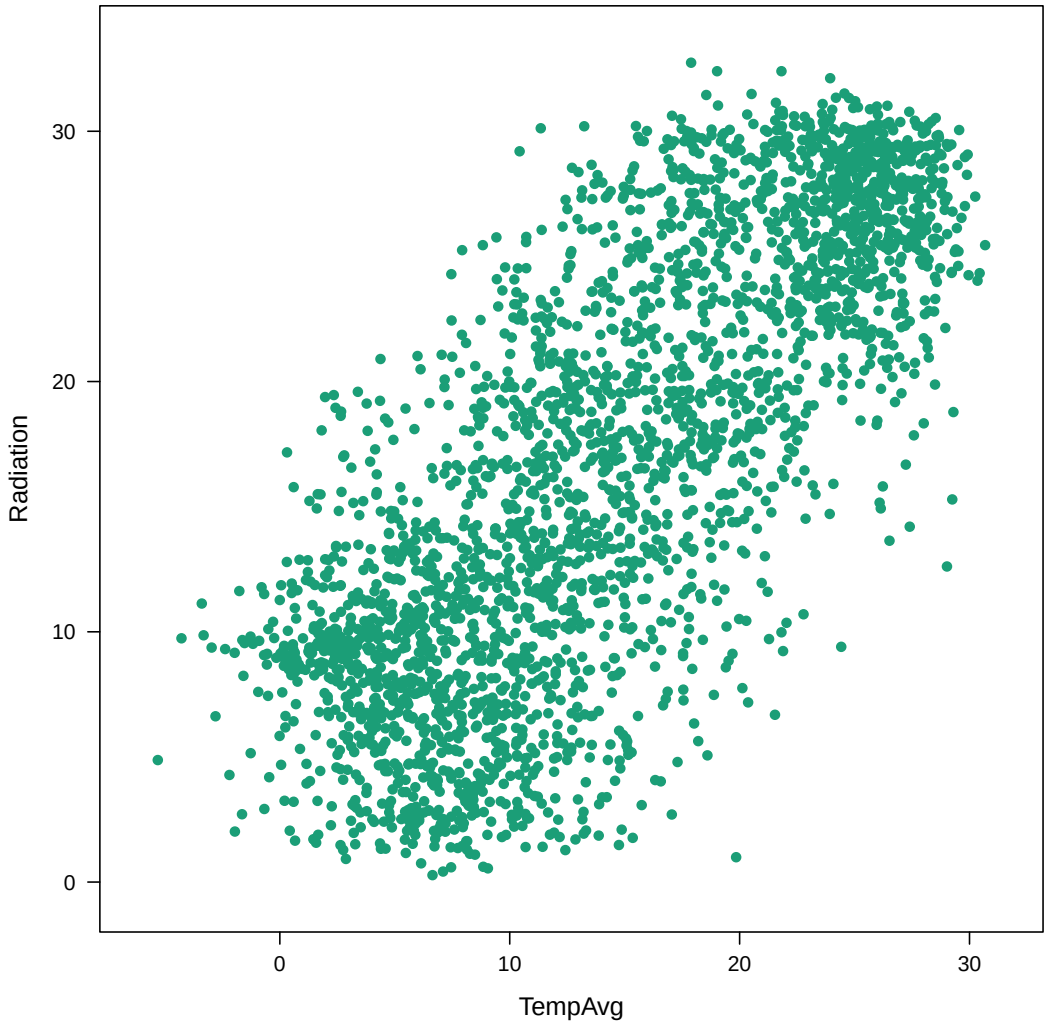
Código y Figuras del libro

xyplot

```
library(lattice)
```

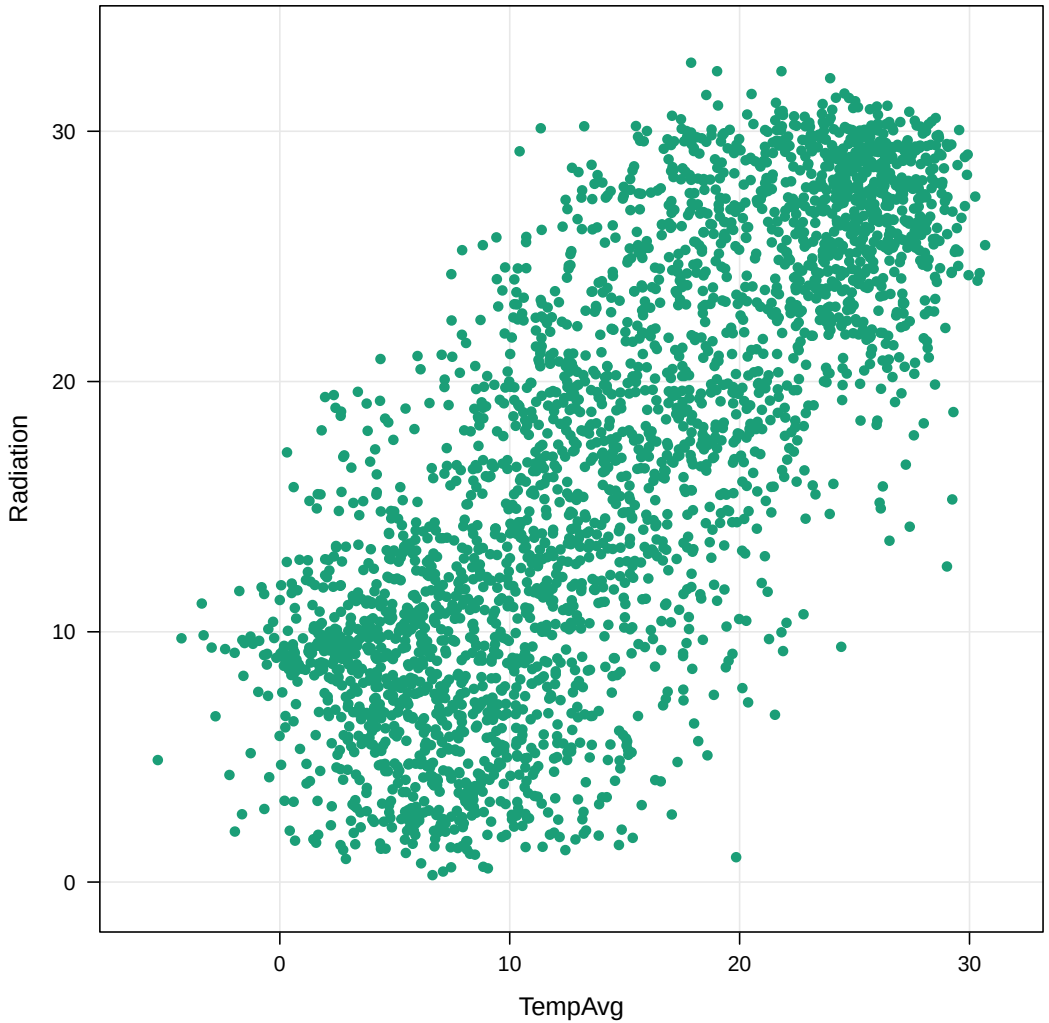
xyplot

```
xyplot(Radiation ~ TempAvg,
       data=aranjuez)
```



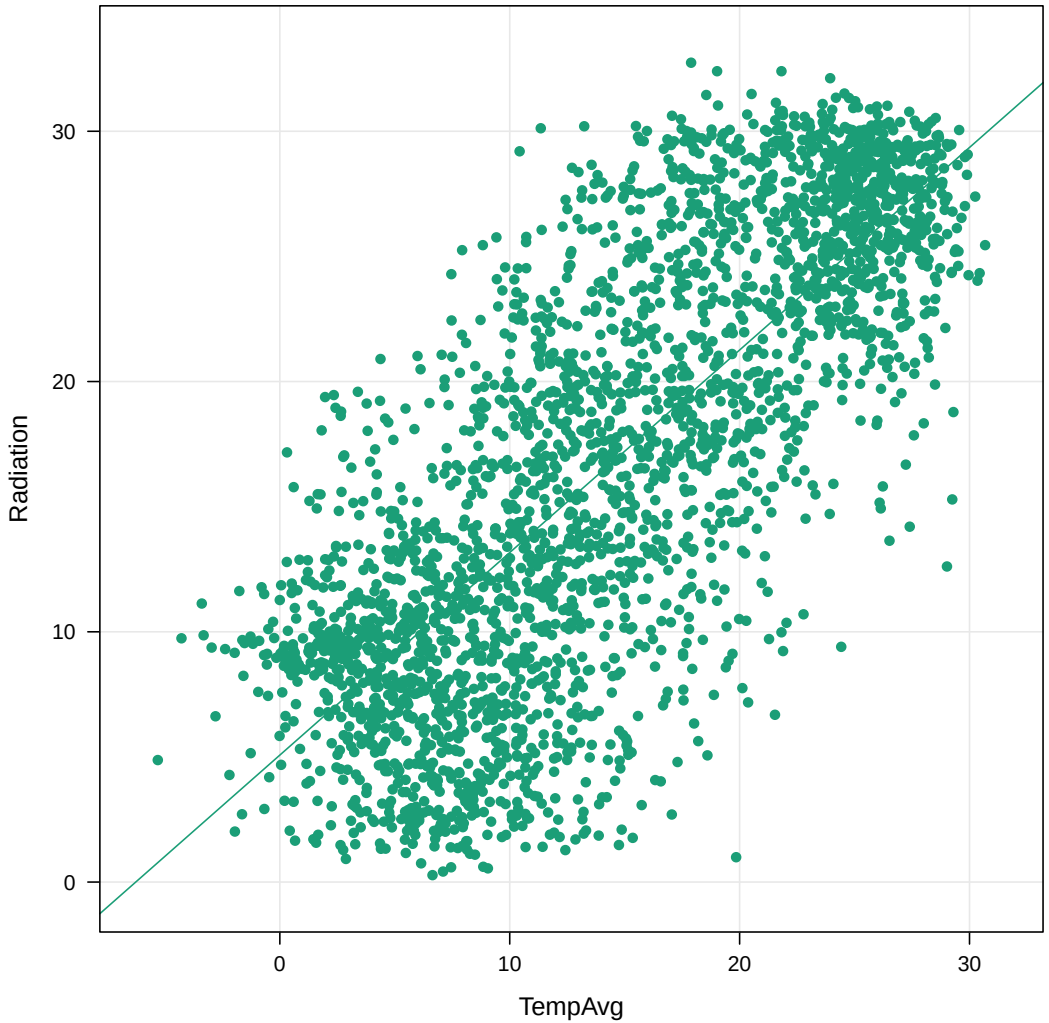
xyplot

```
xyplot(Radiation ~ TempAvg,
       data=aranjuez, type=c('p', 'g'))
```



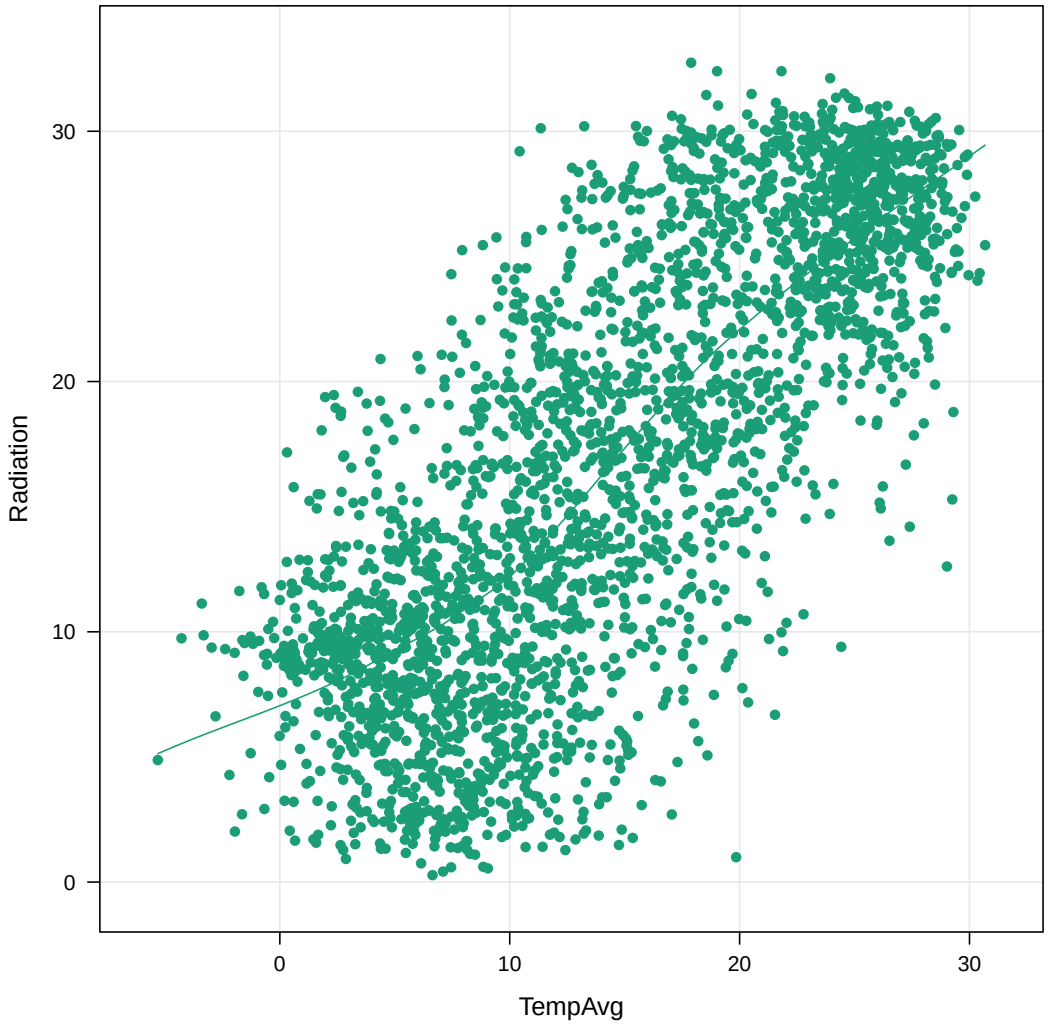
xyplot

```
xyplot(Radiation ~ TempAvg,
       data=aranjuez, type=c('p', 'r', 'g'))
```



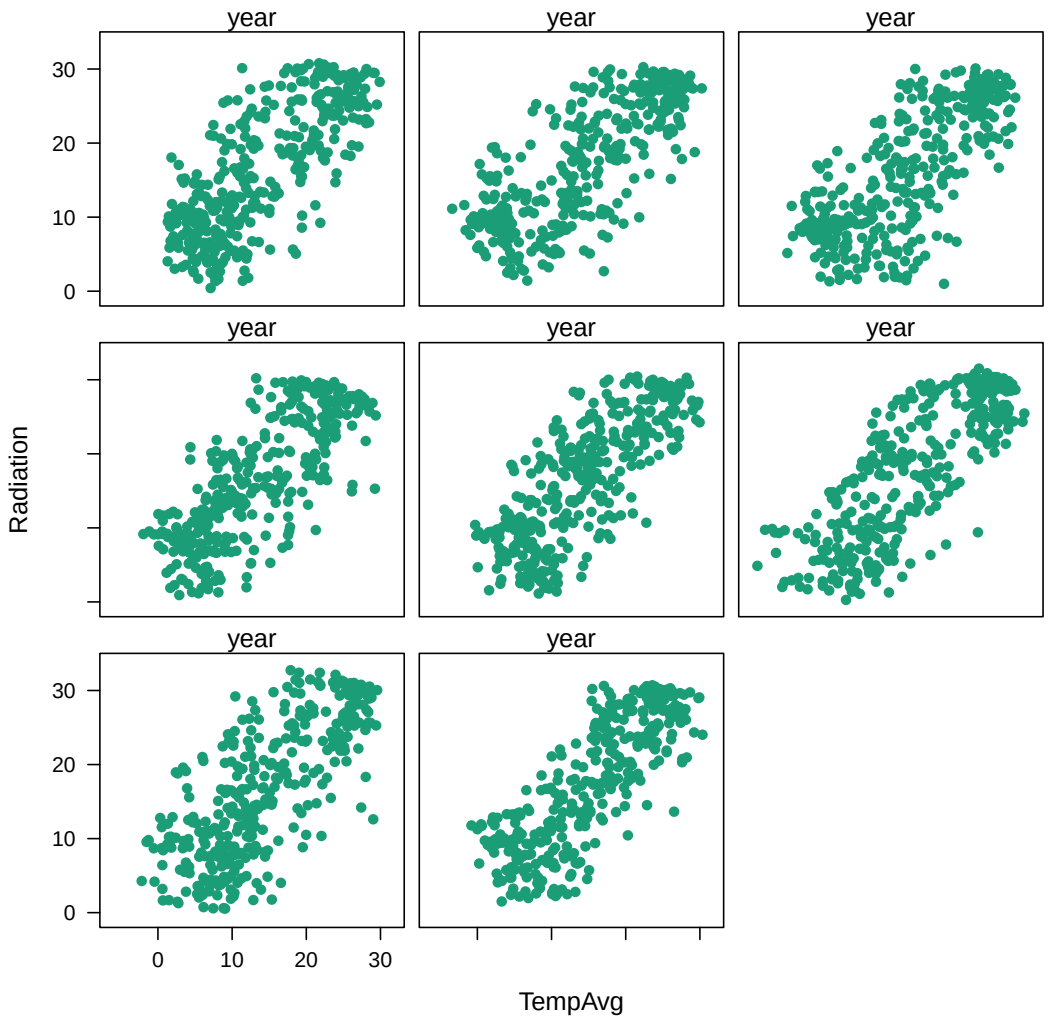
xyplot

```
xyplot(Radiation ~ TempAvg,
       data=aranjuez, type=c('p', 'smooth', 'g'))
```



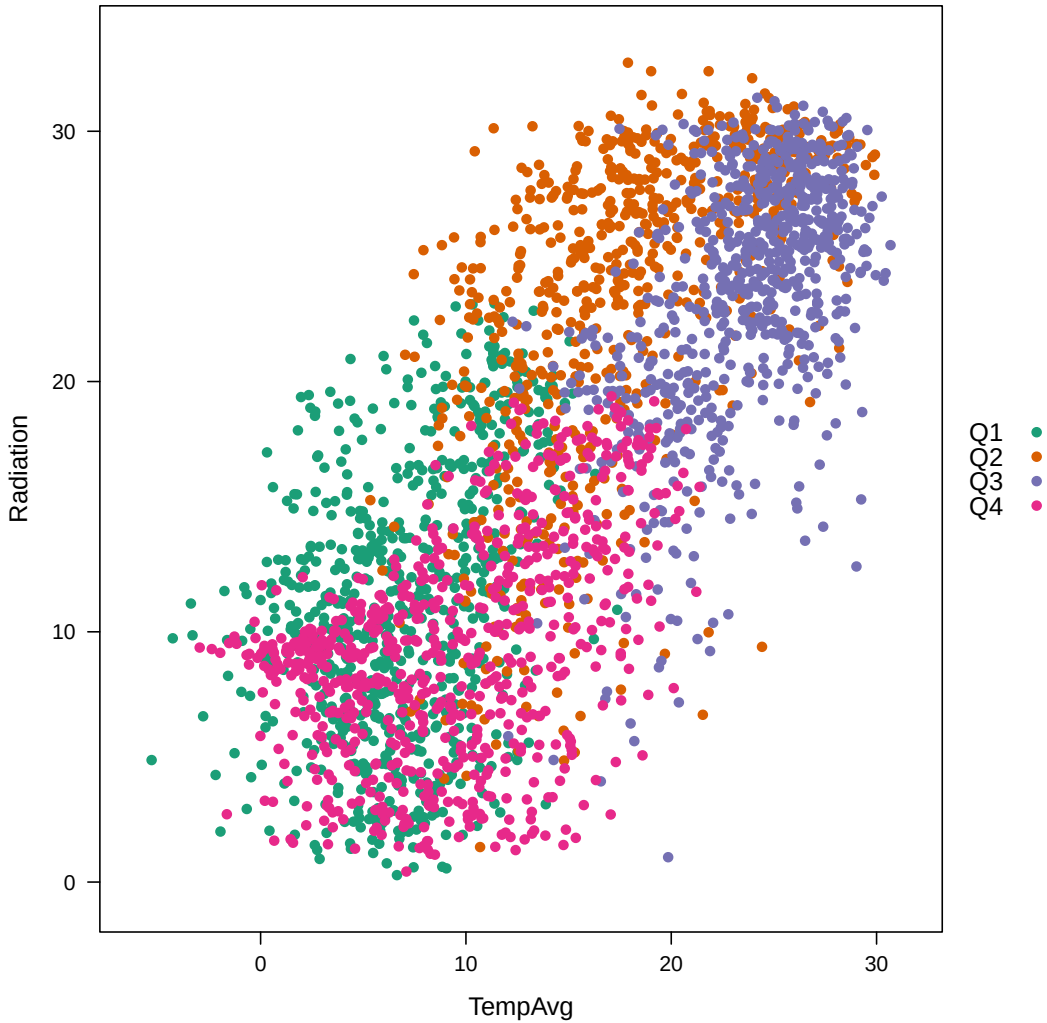
Paneles

```
xyplot(Radiation ~ TempAvg|year, data=aranjuez)
```



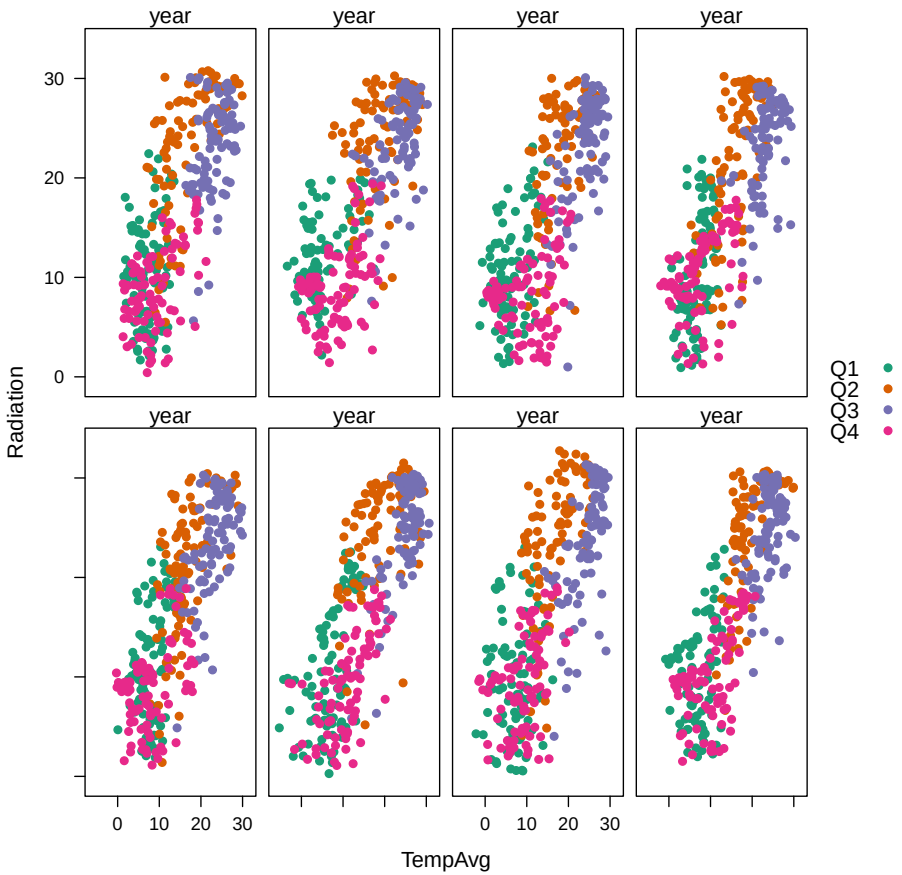
Grupos

```
xyplot(Radiation ~ TempAvg, groups=quarter,
       data=aranjuez, auto.key=list(space='right'))
```



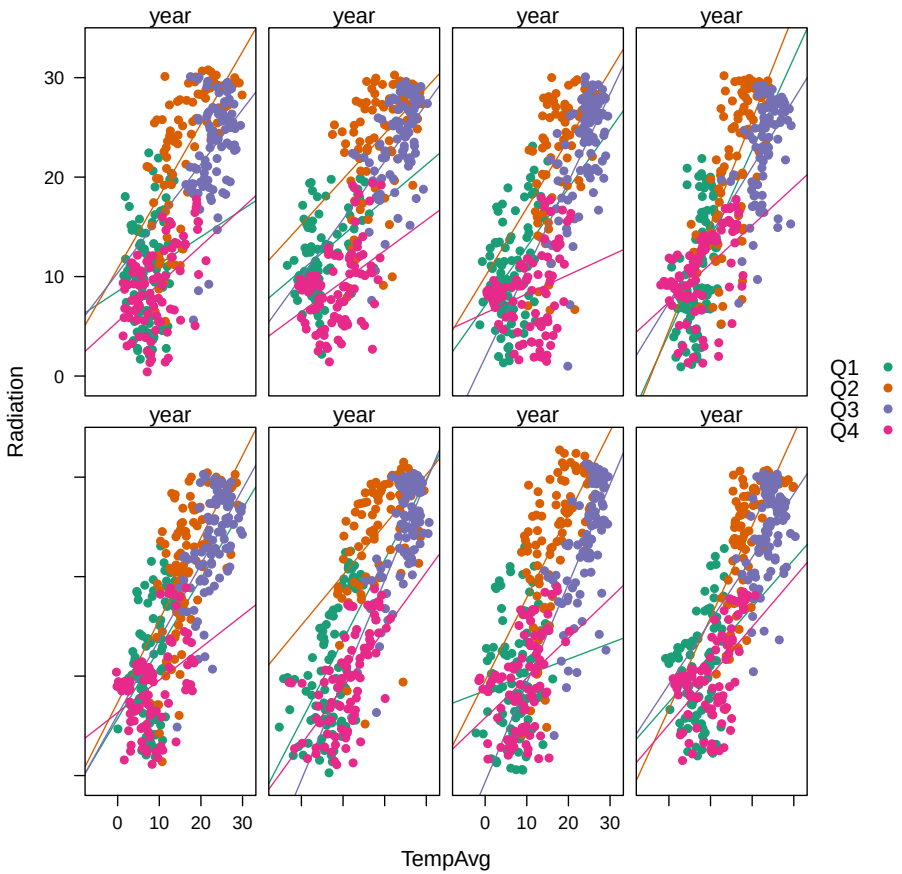
Paneles y grupos

```
xyplot(Radiation ~ TempAvg|year,
       groups=quarter,
       data=aranjuez,
       layout=c(4, 2),
       auto.key=list(space='right'))
```



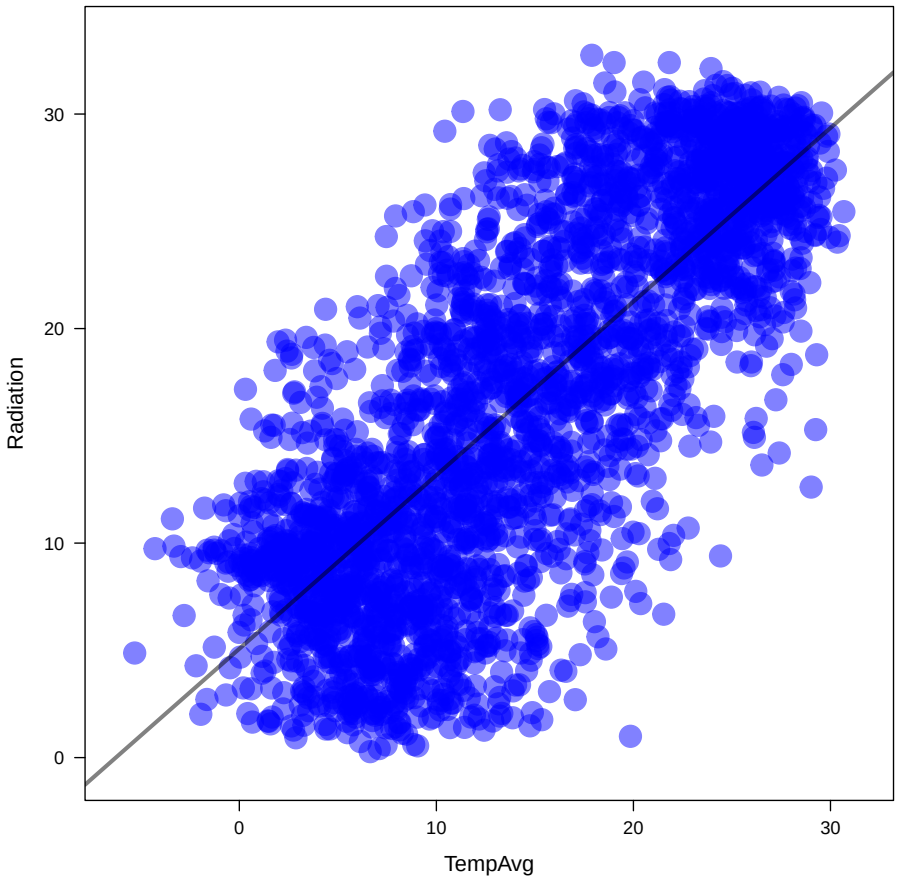
Paneles y grupos

```
xyplot(Radiation ~ TempAvg|year,
       groups=quarter,
       data=aranjuez,
       layout=c(4, 2),
       type=c('p', 'r'),
       auto.key=list(space='right'))
```



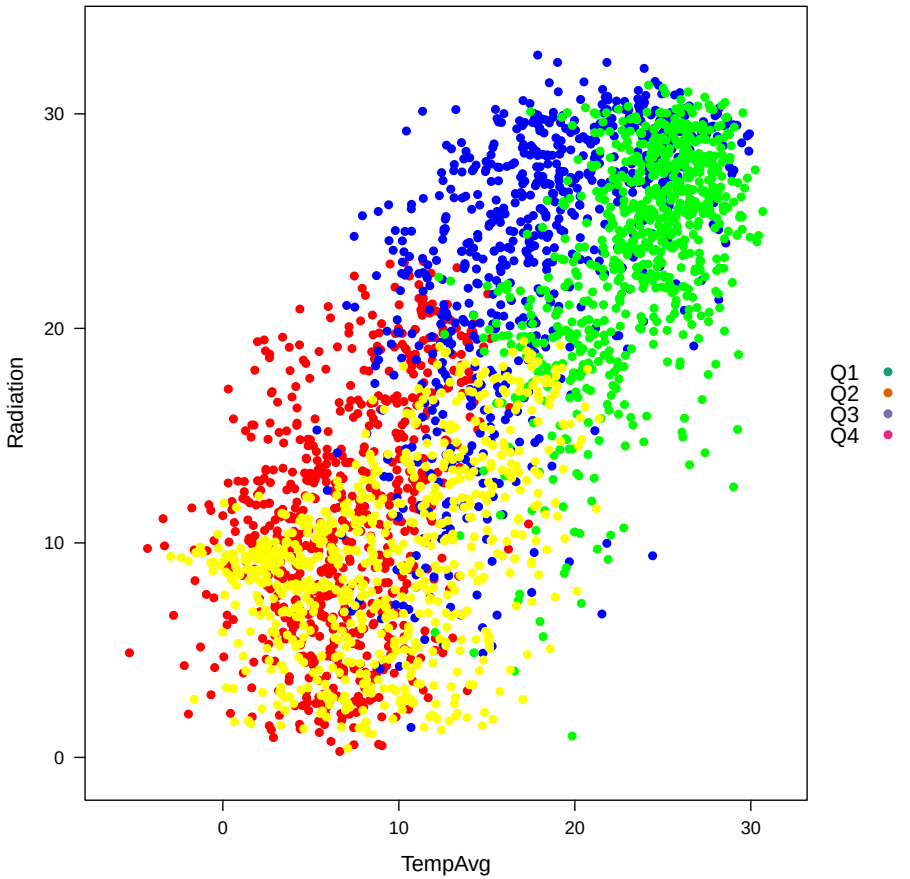
Colores y tamaños

```
xyplot(Radiation ~ TempAvg,
       type=c('p', 'r'),
       cex=2, col='blue',
       alpha=.5,
       lwd=3, col.line='black',
       data=aranjuez)
```



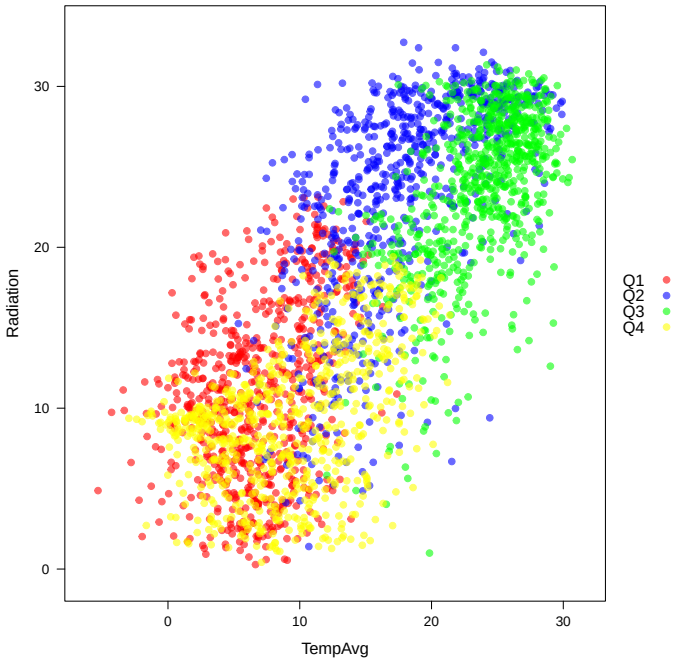
Colores con grupos

```
xyplot(Radiation ~ TempAvg,
       group=quarter,
       col=c('red', 'blue', 'green', 'yellow'),
       auto.key=list(space='right'),
       data=aranjuez)
```



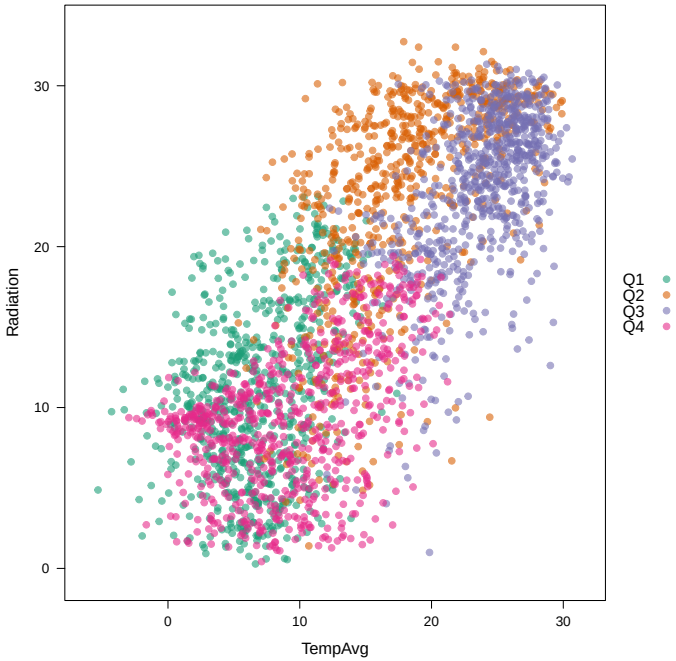
Colores con grupos: par.settings

```
myTheme <- custom.theme(symbol=c('red', 'blue',
                        'green', 'yellow'),
                        pch=19, alpha=.6)
xyplot(Radiation ~ TempAvg,
       groups=quarter,
       par.settings=myTheme,
       auto.key=list(space='right'),
       data=aranjuez)
```



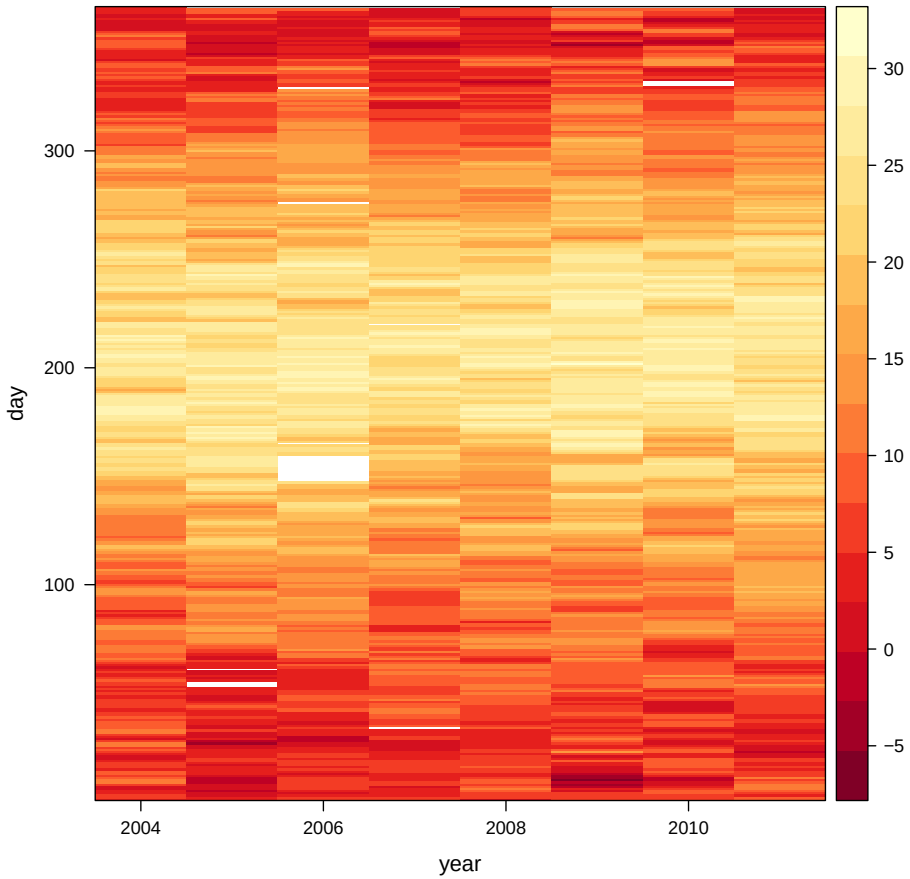
Colores: brewer.pal

```
library(RColorBrewer)
myTheme <- custom.theme(symbol=brewer.pal(n=4,
                        'Dark2'),
                        pch=19, alpha=.6)
xyplot(Radiation ~ TempAvg,
       groups=quarter,
       par.settings=myTheme,
       auto.key=list(space='right'),
       data=aranjuez)
```



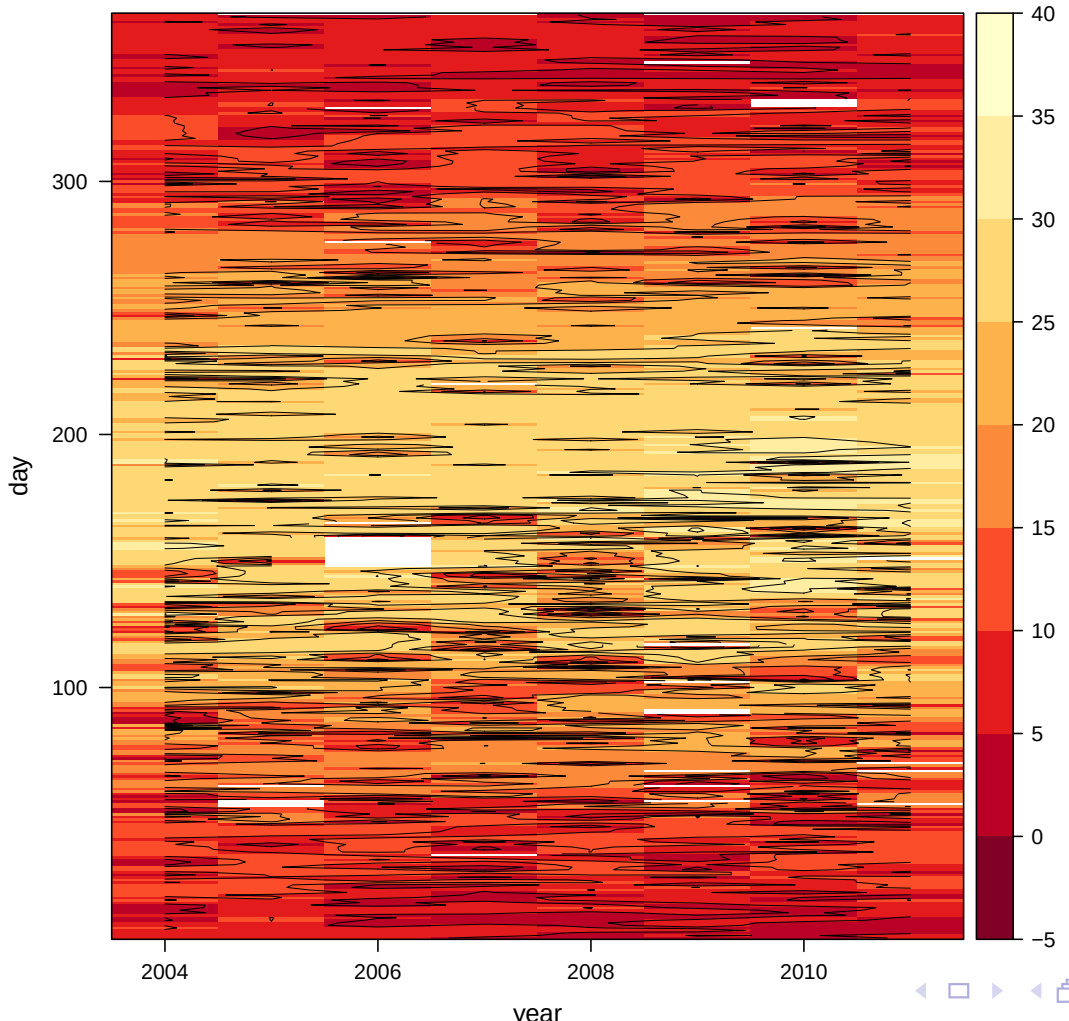
levelplot

```
levelplot(TempAvg ~ year * day,
          data=aranjuez)
```



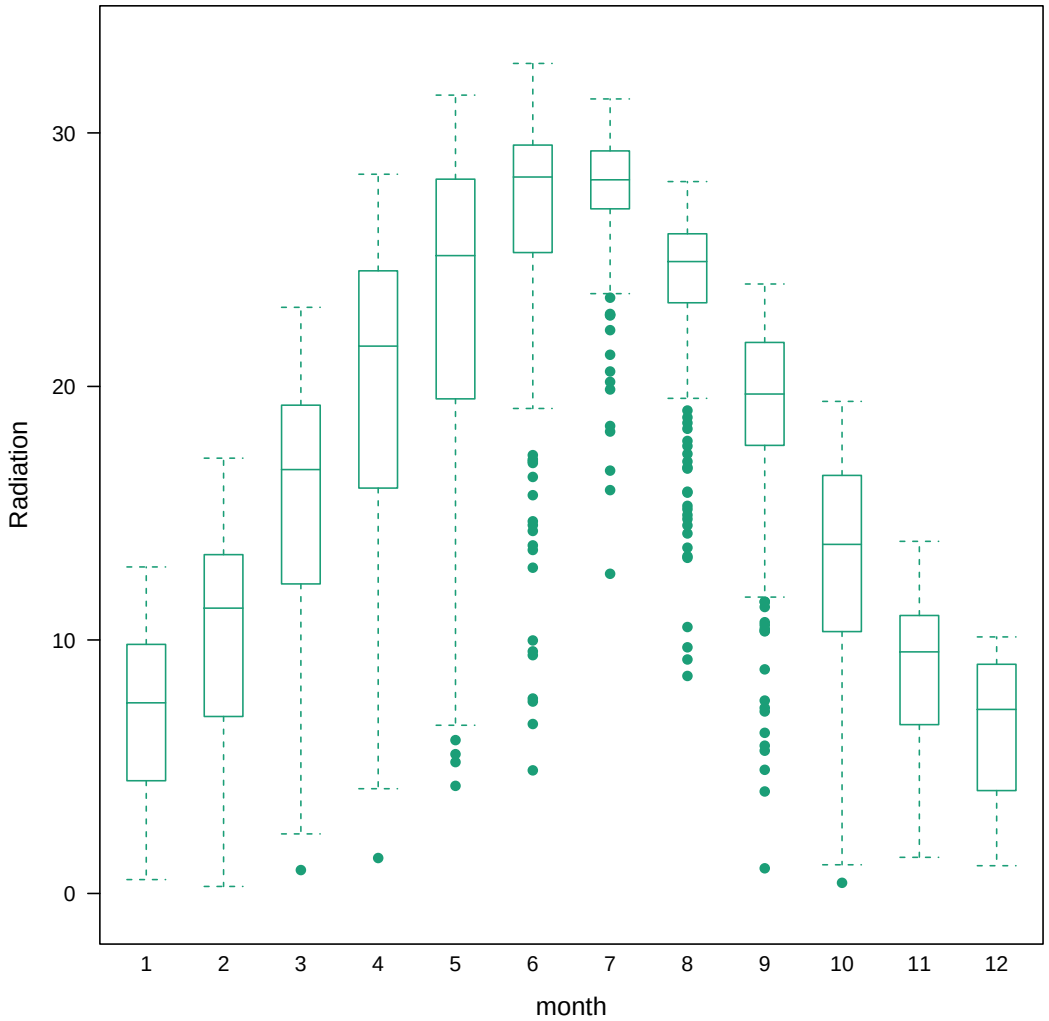
contourplot

```
contourplot(Radiation ~ year * day,
            lwd=.5, labels=FALSE,
            region=TRUE,
            data=aranjuez)
```



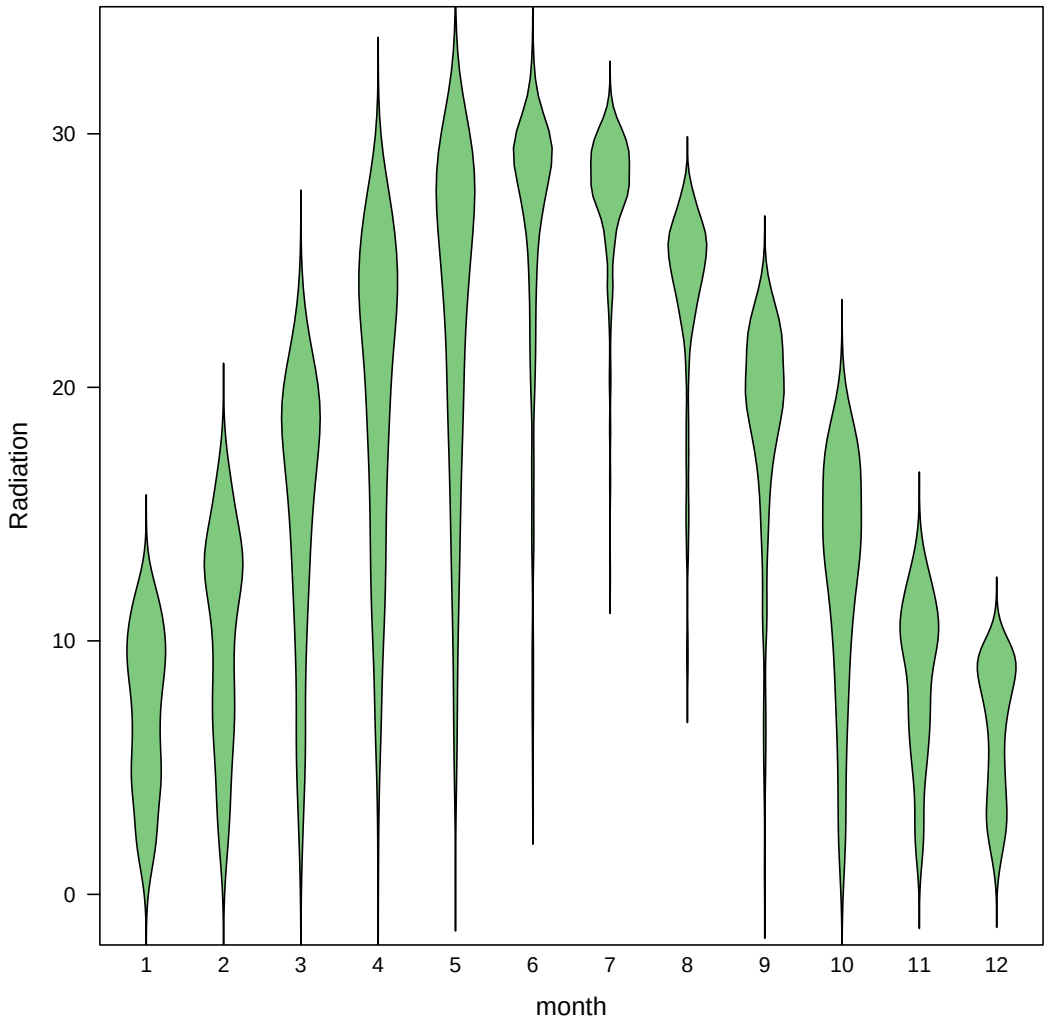
Box-and-Whiskers

```
bwplot(Radiation ~ month, data=aranjuez,
       horizontal=FALSE, pch='|')
```



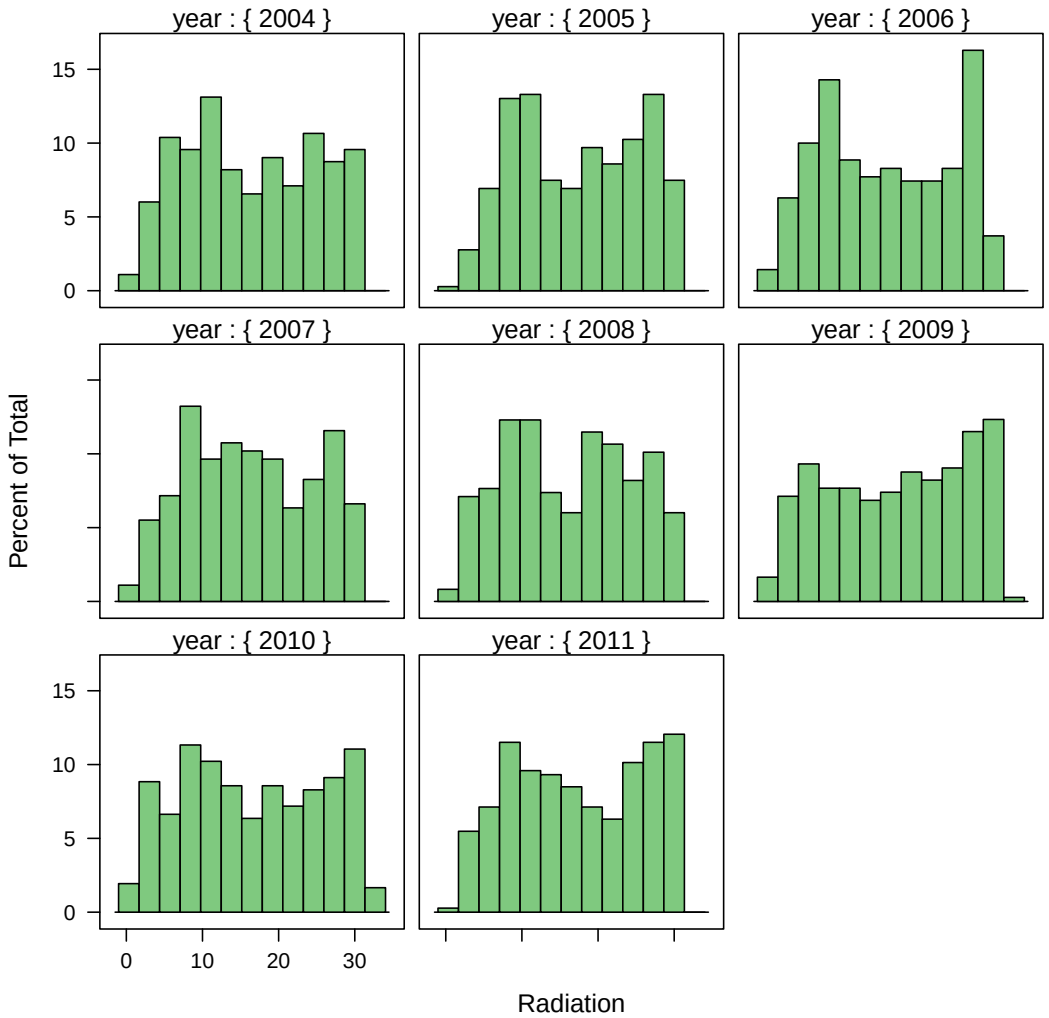
Box-and-Whiskers

```
bwplot(Radiation ~ month, data=aranjuez,
       horizontal=FALSE,
       panel=panel.violin)
```



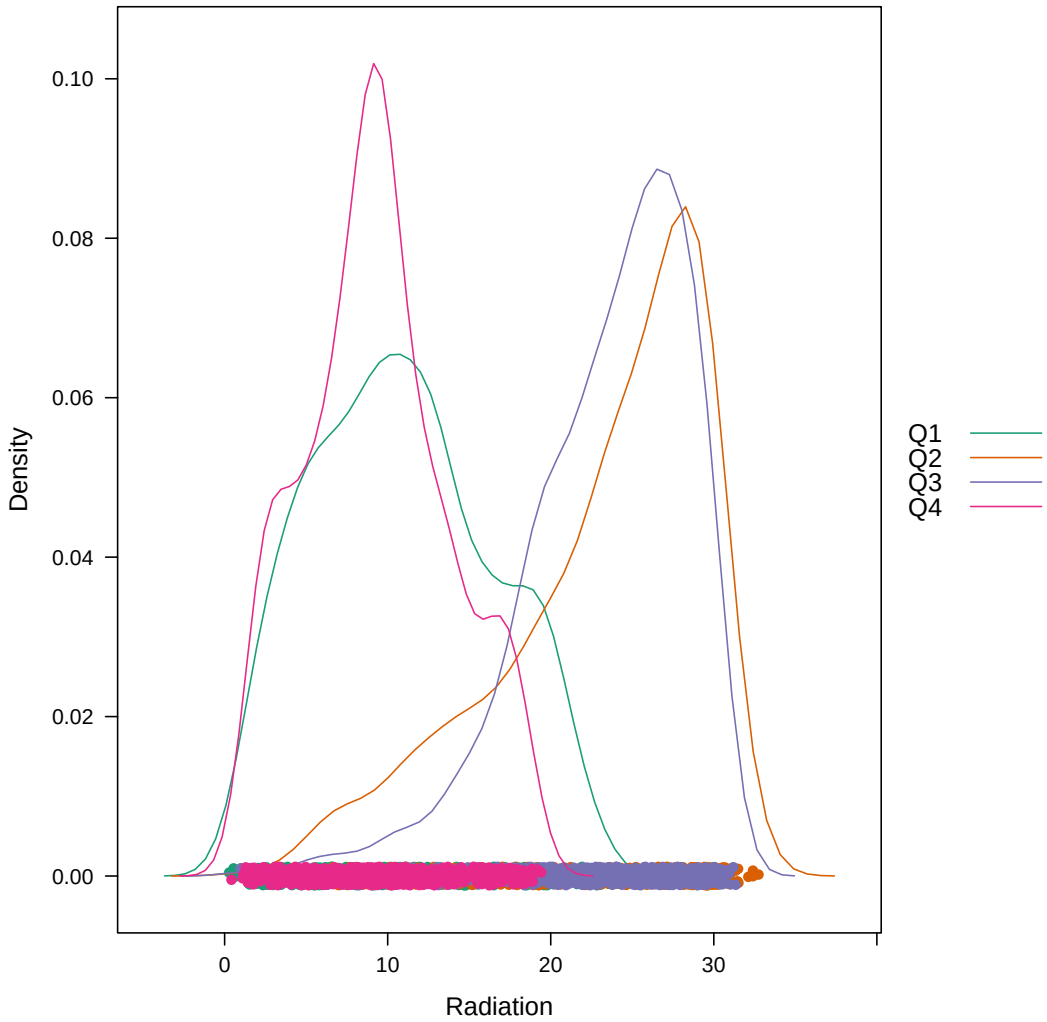
Histogramas

```
histogram(~Radiation|year, data=aranjuez,
          strip=strip.custom(strip.levels=TRUE))
```



Gráficos de densidad

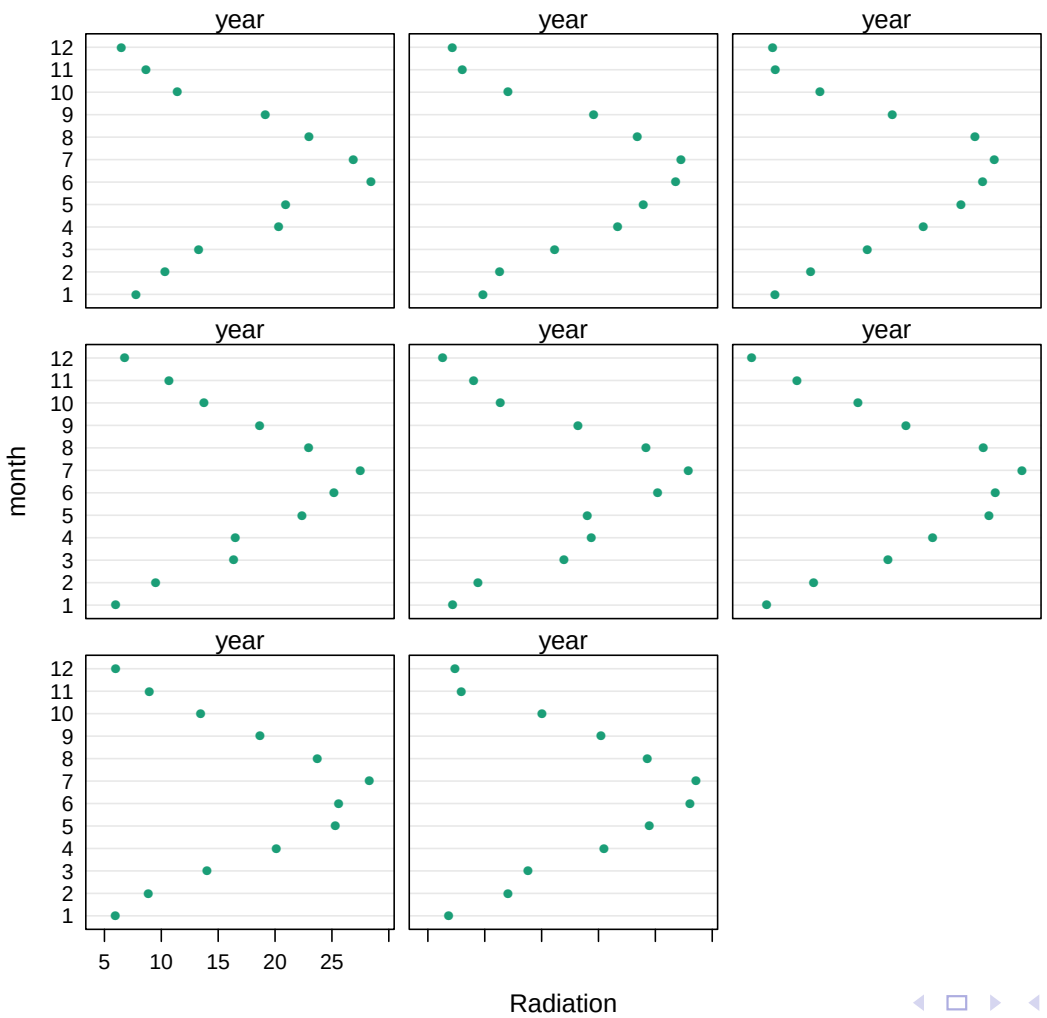
```
densityplot(~Radiation, groups=quarter,
            data=aranjuez,
            auto.key=list(space='right'))
```



dotplot

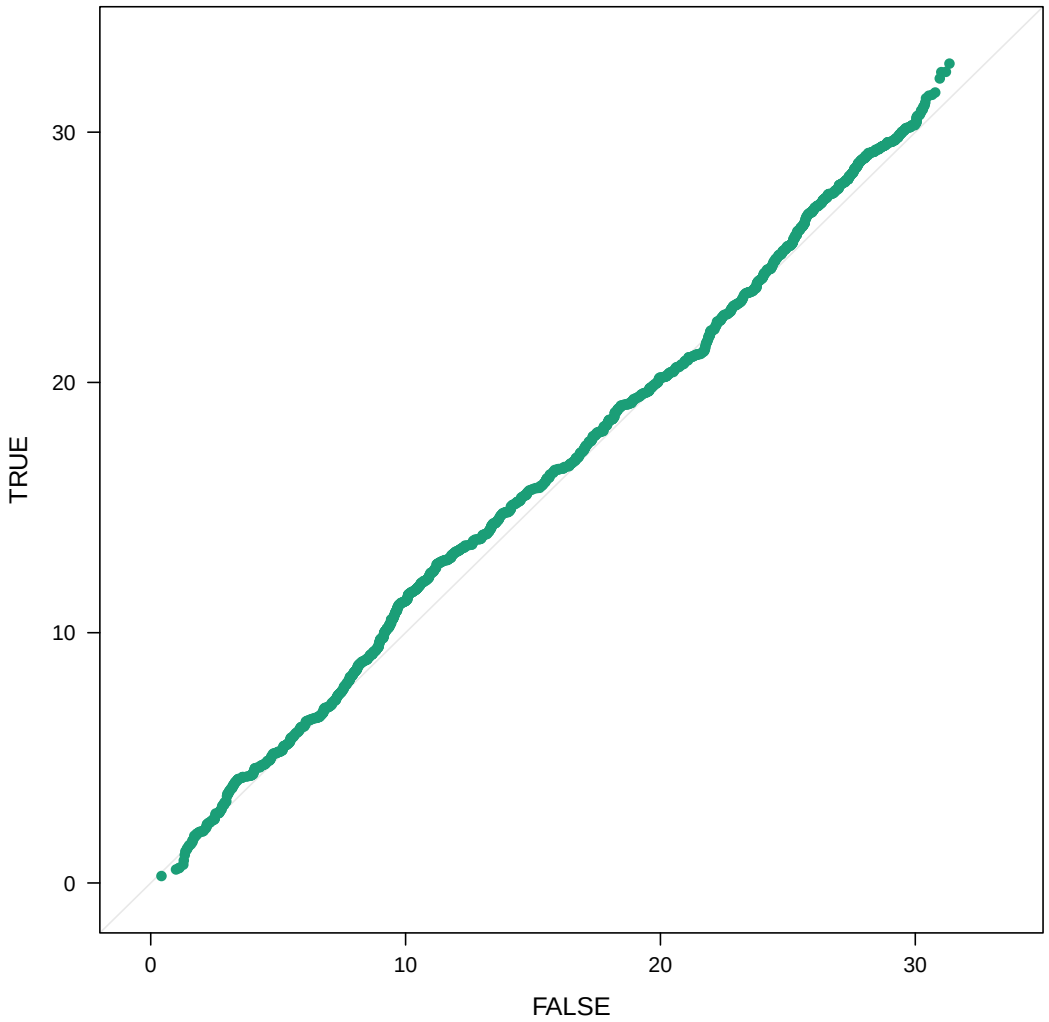
```
avRad <- aggregate(Radiation ~ month * year,
                   data=aranjuez, FUN=mean)
```

```
dotplot(month ~ Radiation|year, data=avRad)
```



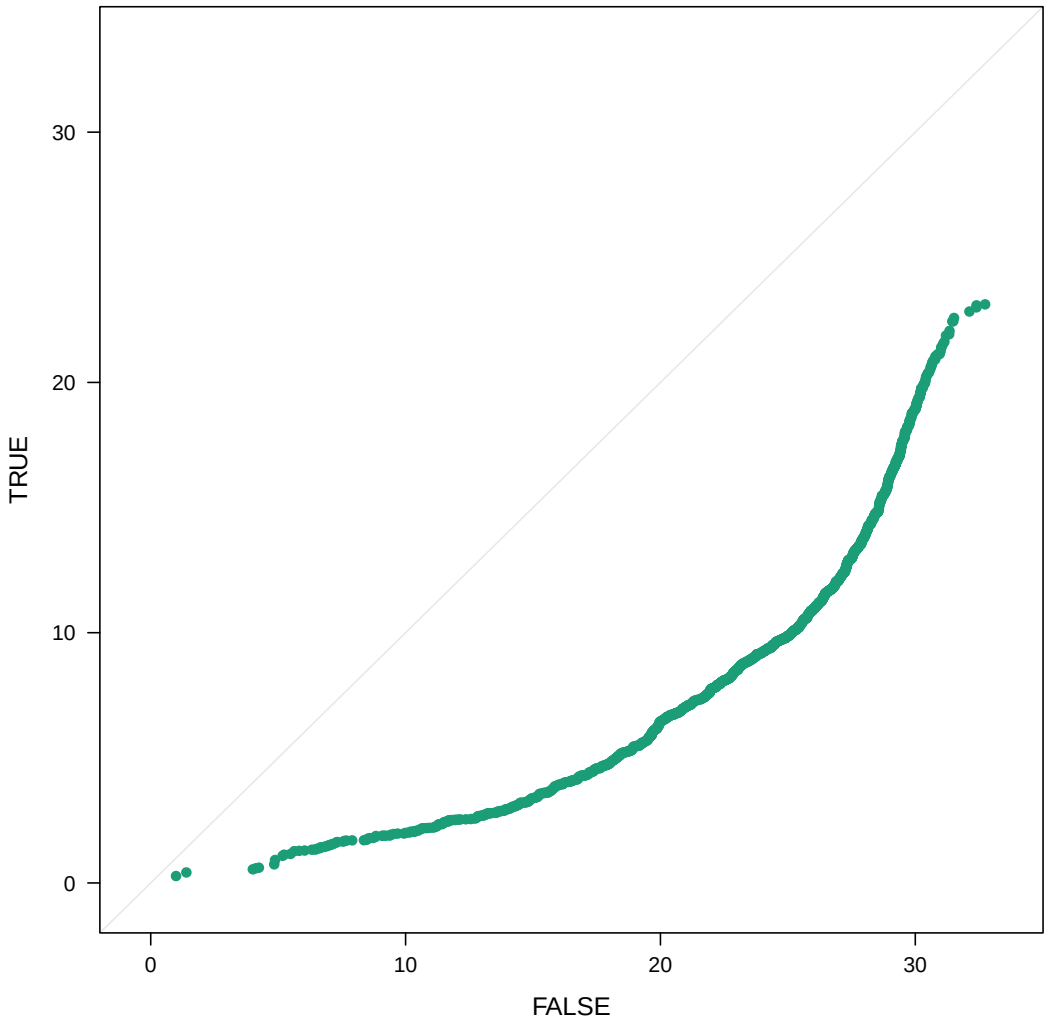
Quantile-Quantile

```
firstHalf <- aranjuez$quarter %in% c('Q1', 'Q2')

qq(firstHalf ~ Radiation, data=aranjuez)
```



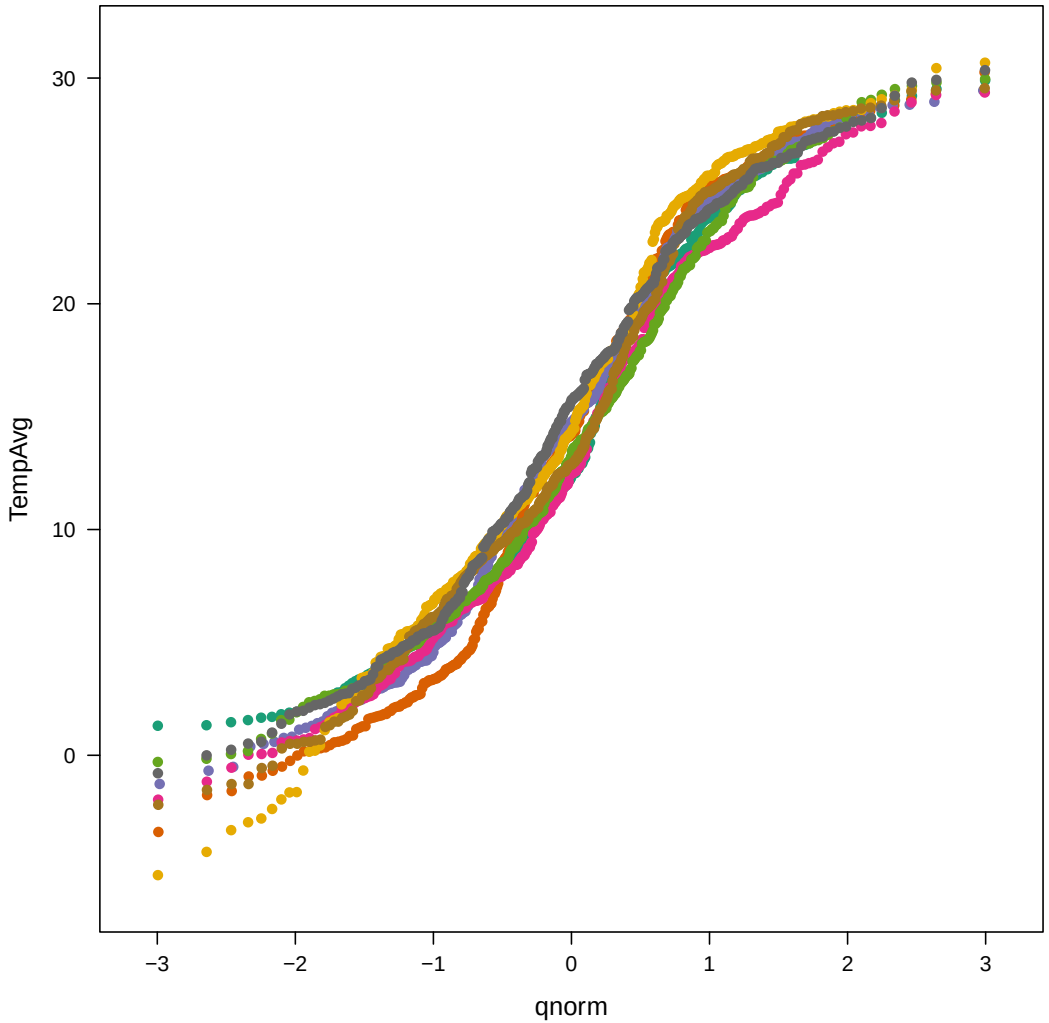
Quantile-quantile

```
winter <- aranjuez$quarter %in% c('Q1', 'Q4')

qq(winter ~ Radiation, data=aranjuez)
```



Quantile-Quantile

```
qqmath(~TempAvg, data=aranjuez,
       groups=year, distribution=qnorm)
```



ggplot2 desde lattice

ggplot2 desde lattice (PDF)