Anexo

Luis Miguel Domínguez Pérez

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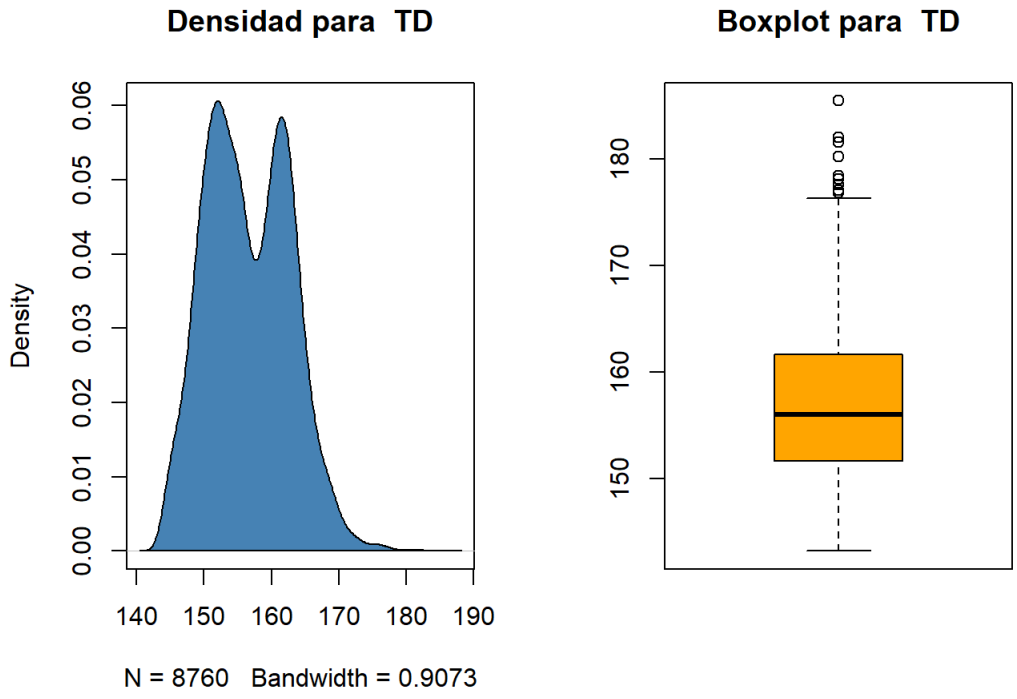
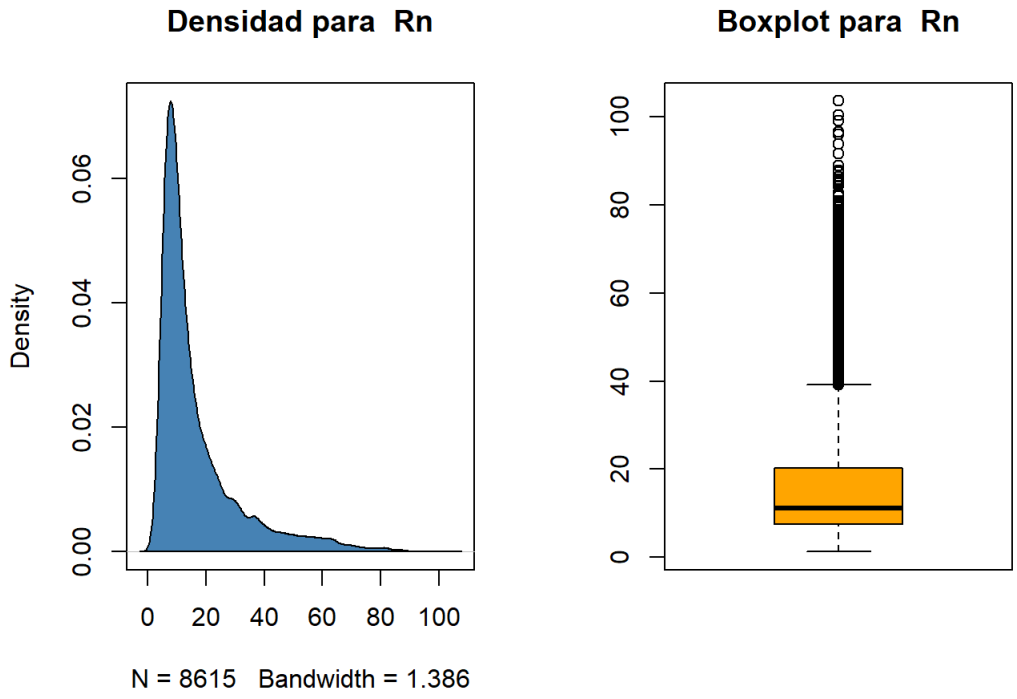
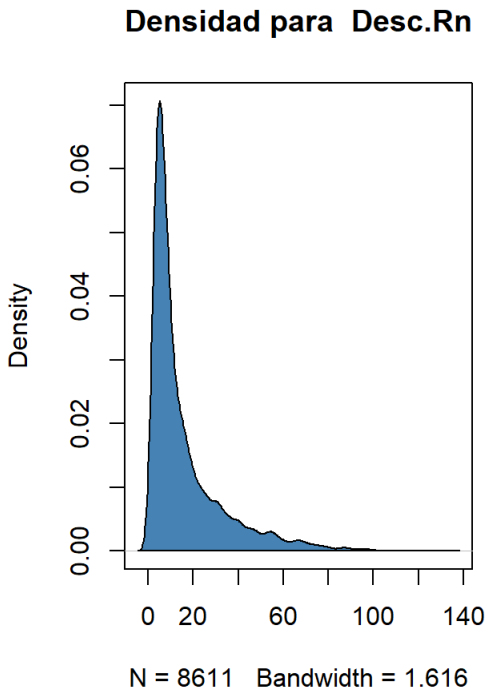
Figura 1:

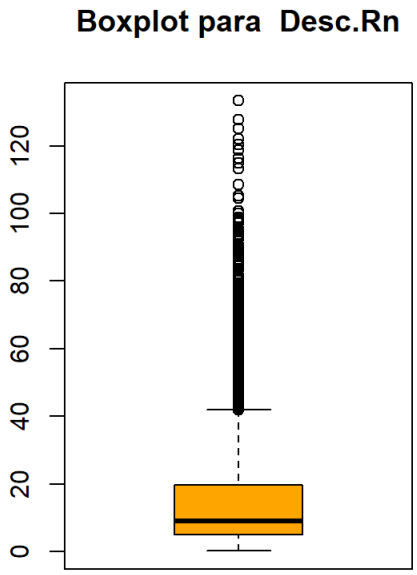
Análisis de gráficos de densidad y boxplot de las variables cuantitativas iniciales.

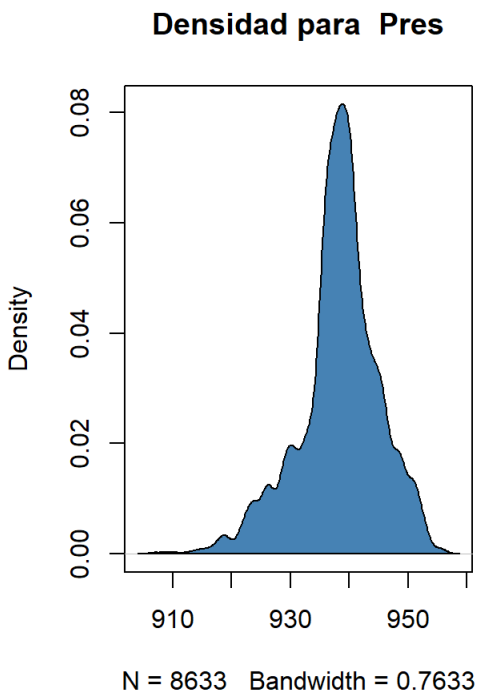
```
par(mfrow=c(1,2))
for(i in (colnames(Filter(is.numeric, datos)))){
  dens <- density(na.omit(datos[[i]]))
  plot(dens, main = paste("Densidad para ", i), col = "steelblue")
    polygon(dens, col = "steelblue")
  box <- boxplot(datos[i], main = paste("Boxplot para ", i), col = "Orange")
}
```

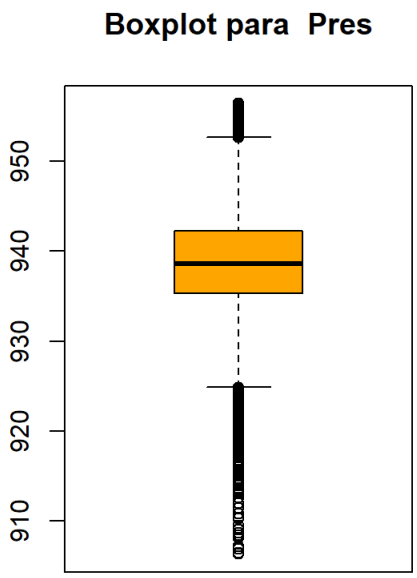


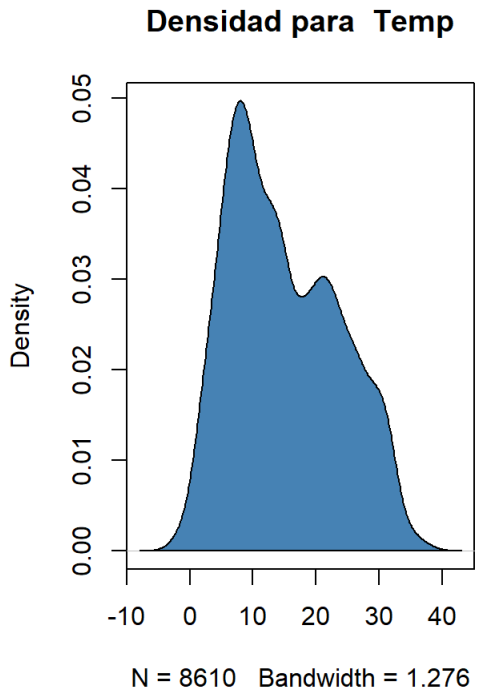


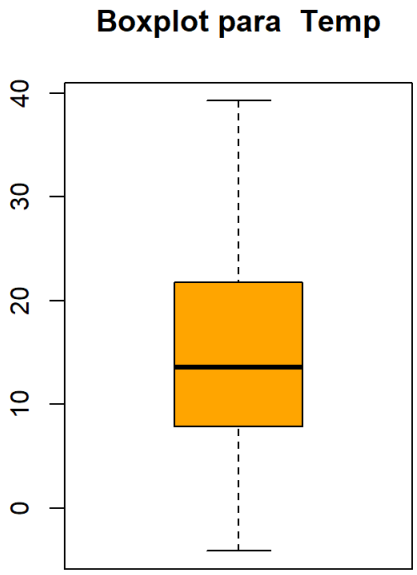

Densidad para Desc.Rn
Density
0.00
0.02
0.04
0.06
0
20
60
100
140
N = 8611 Bandwidth = 1.616

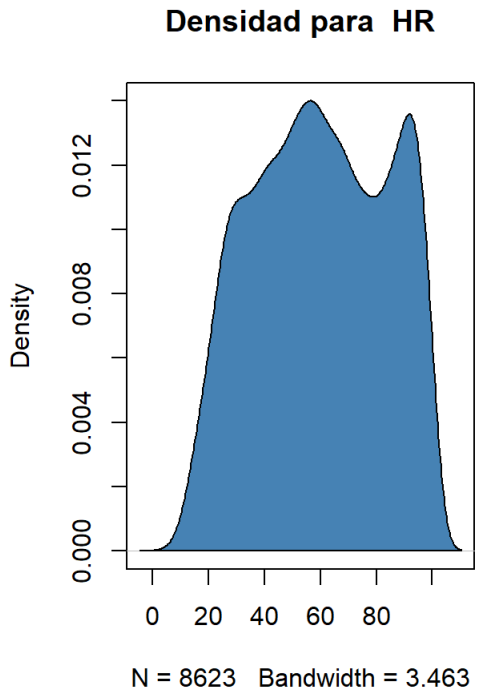

Boxplot para Desc.Rn
0
20
40
60
80
100
120

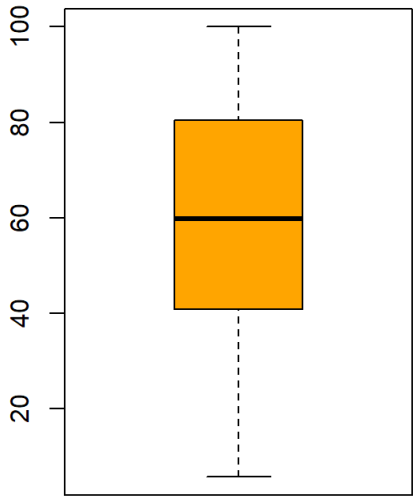

Densidad para Pres
Density
0.00
0.02
0.04
0.06
0.08
910
930
950
N = 8633 Bandwidth = 0.7633

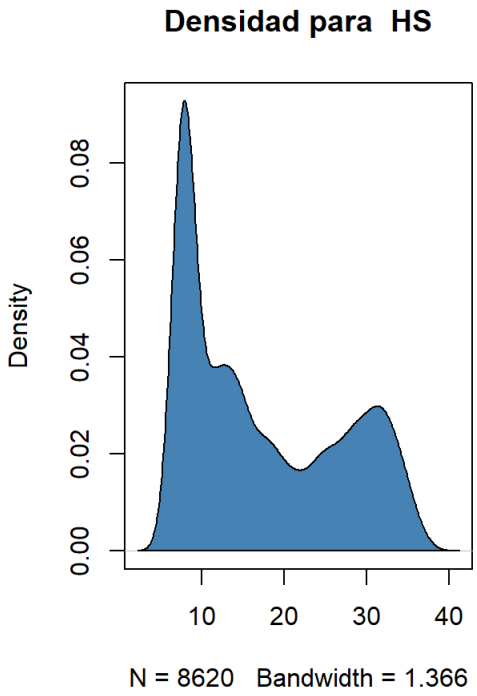

Boxplot para Pres
910
920
930
940
950

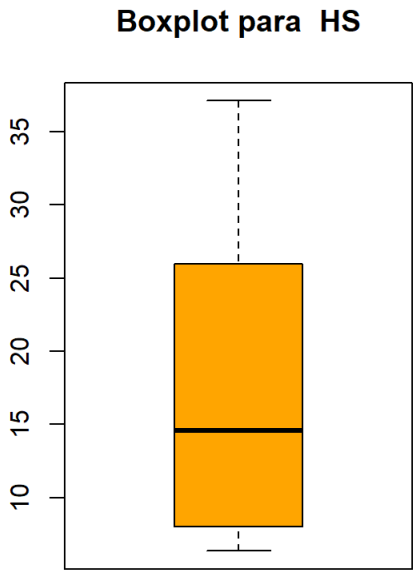

Densidad para Temp
Density
0.00
0.01
0.02
0.03
0.04
0.05
-10
0
10
20
30
40
N = 8610 Bandwidth = 1.276

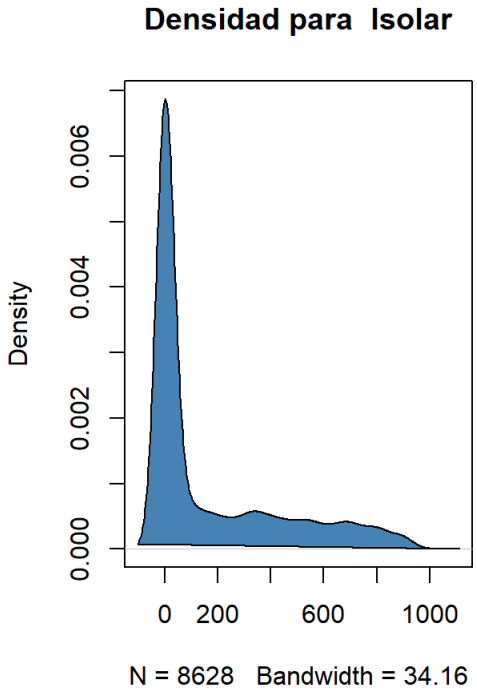

Boxplot para Temp
0
10
20
30
40

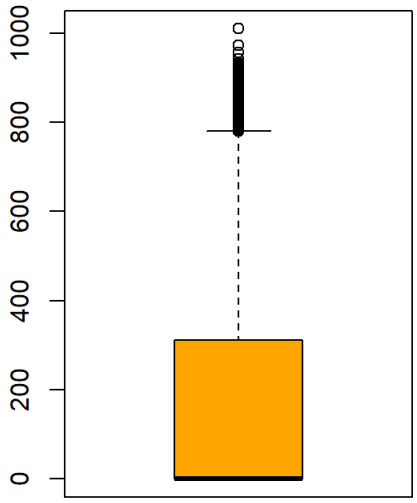

Densidad para HR
Density
0.000
0.004
0.008
0.012
0
20
40
60
80
N = 8623 Bandwidth = 3.463

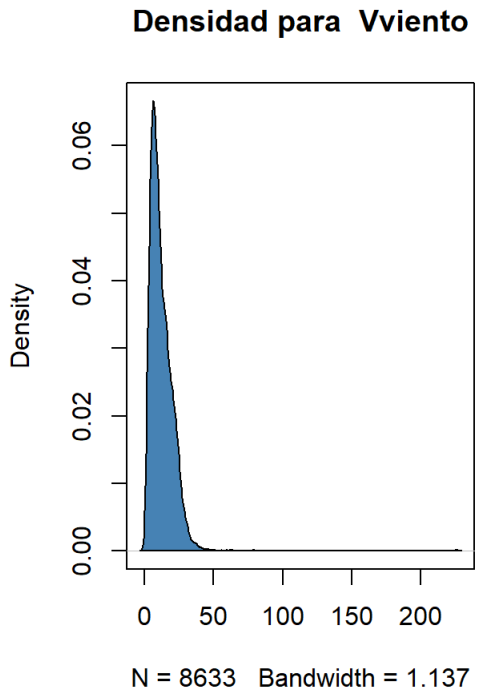

Boxplot para HR
20
40
60
80
100

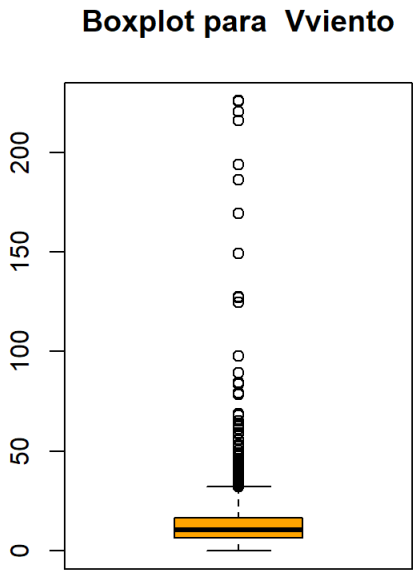

Densidad para HS
Density
0.00
0.02
0.04
0.06
0.08
10
20
30
40
N = 8620 Bandwidth = 1.366

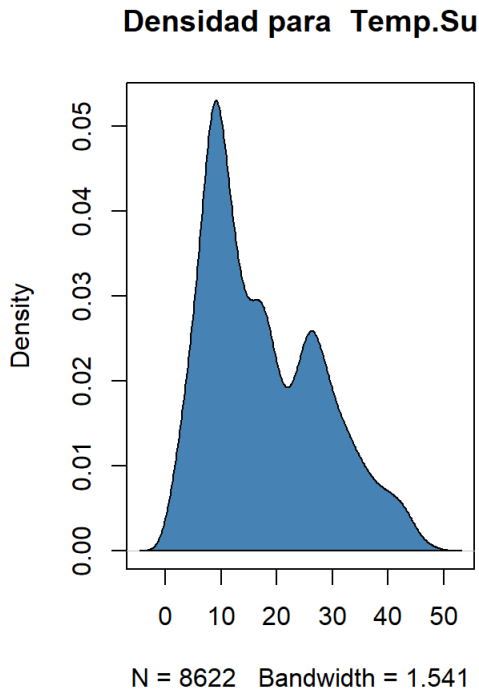

Boxplot para HS
10
15
20
25
30
35

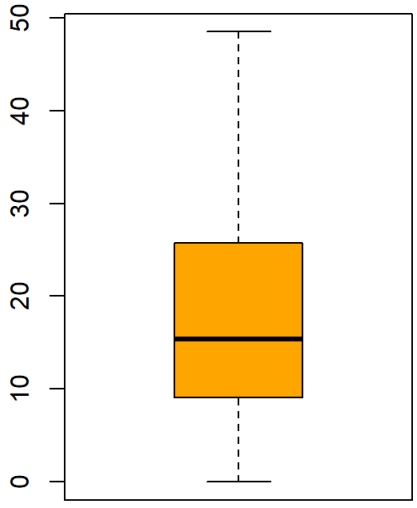

Densidad para Isolar
Density
0.000
0.002
0.004
0.006
0
200
600
1000
N = 8628 Bandwidth = 34.16


Boxplot para Isolar
0
200
400
600
800
1000


Densidad para Vviento
Density
0.00
0.02
0.04
0.06
0
50
100
150
200
N = 8633 Bandwidth = 1.137


Boxplot para Vviento
0
50
100
150
200


Densidad para Temp.Su
Density
0.00
0.01
0.02
0.03
0.04
0.05
0
10
20
30
40
50
N = 8622 Bandwidth = 1.541


Boxplot para Temp.Su
0
10
20
30
40
50

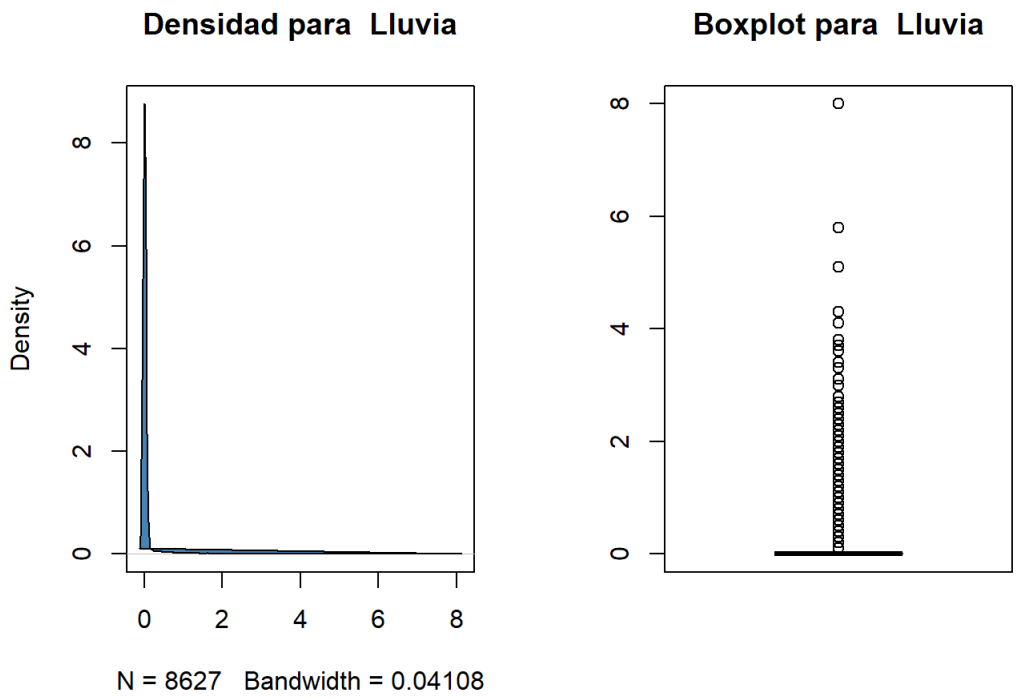
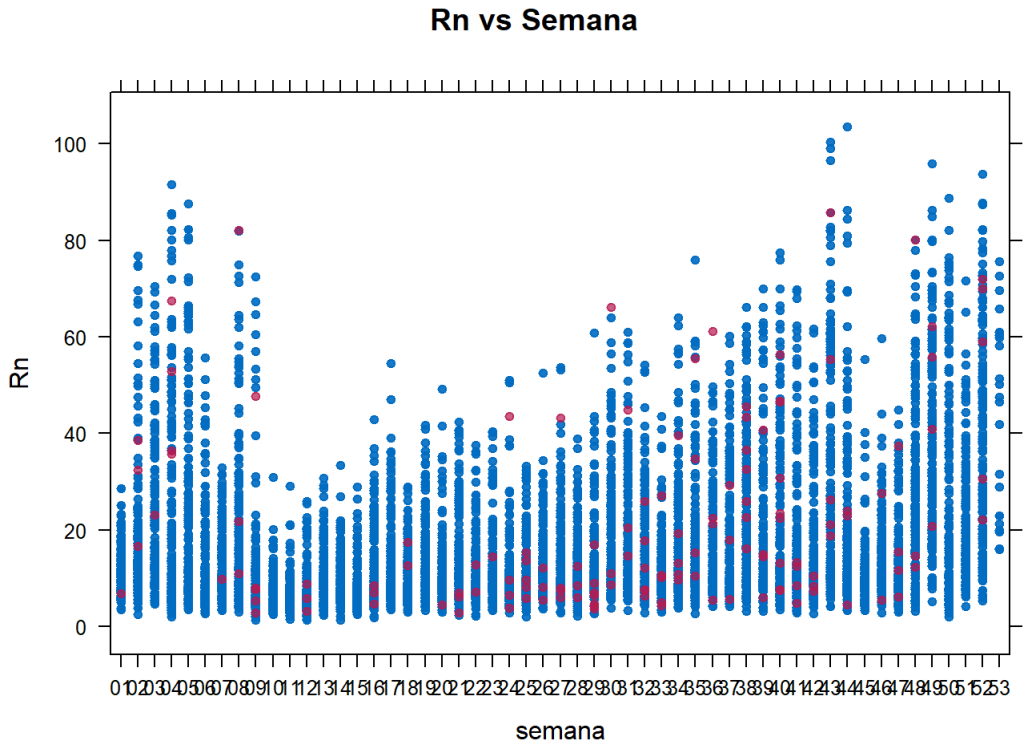


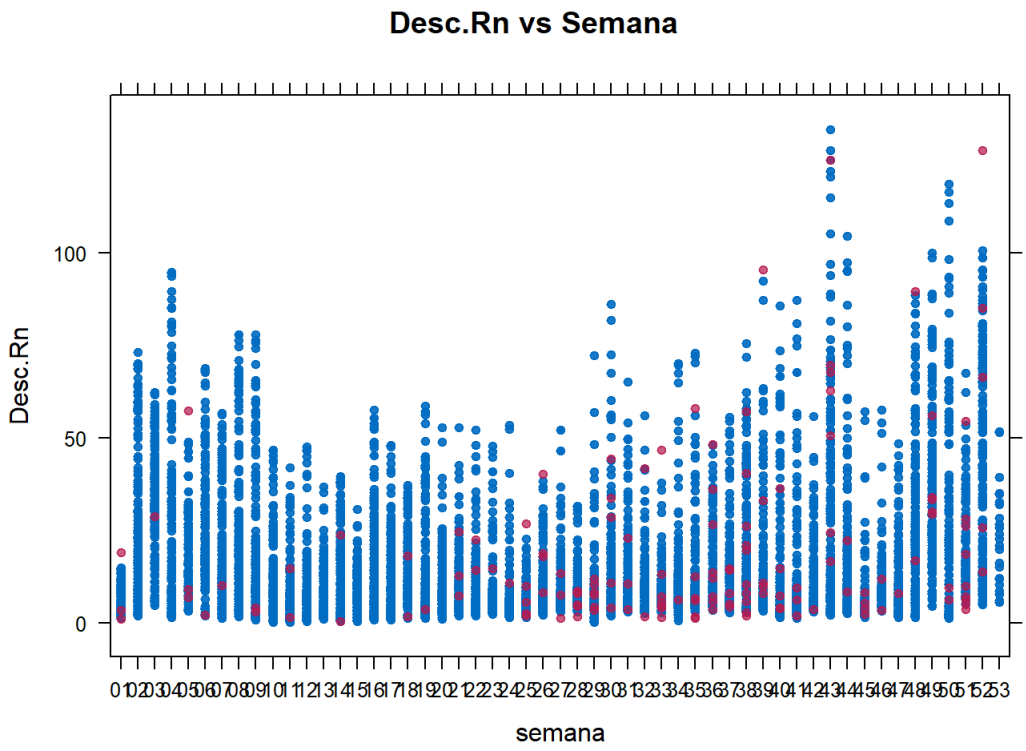
Figura 2.

Datos imputados vs variable semana.

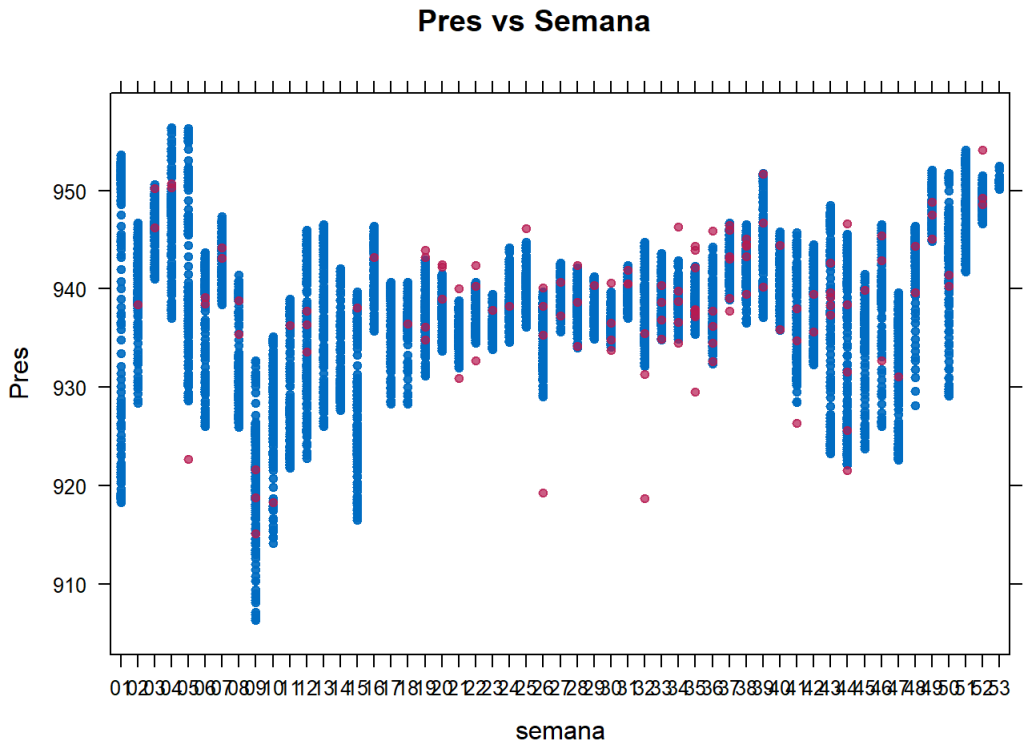
```
par(mfrow=c(3,2))


xyplot (imputation, Rn~semana, pch = 19, cex = 0.7, main = "Rn vs Semana")
```



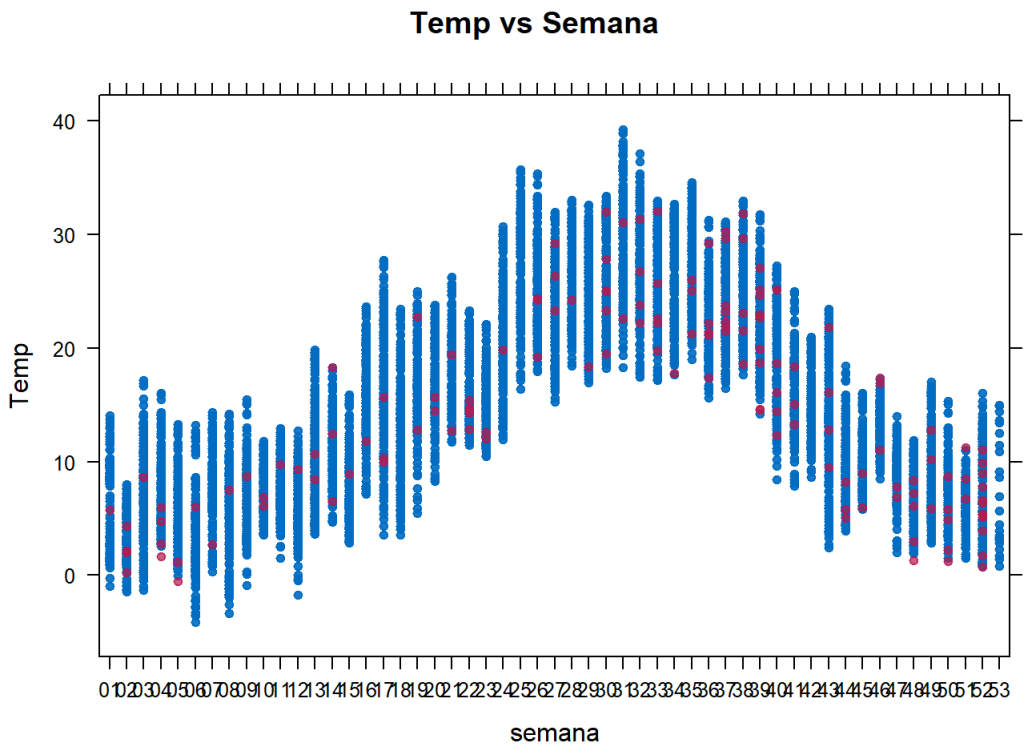

```
xyplot (imputation, Desc.Rn~semana, pch = 19, cex = 0.7, main = "Desc.Rn vs Semana")
```



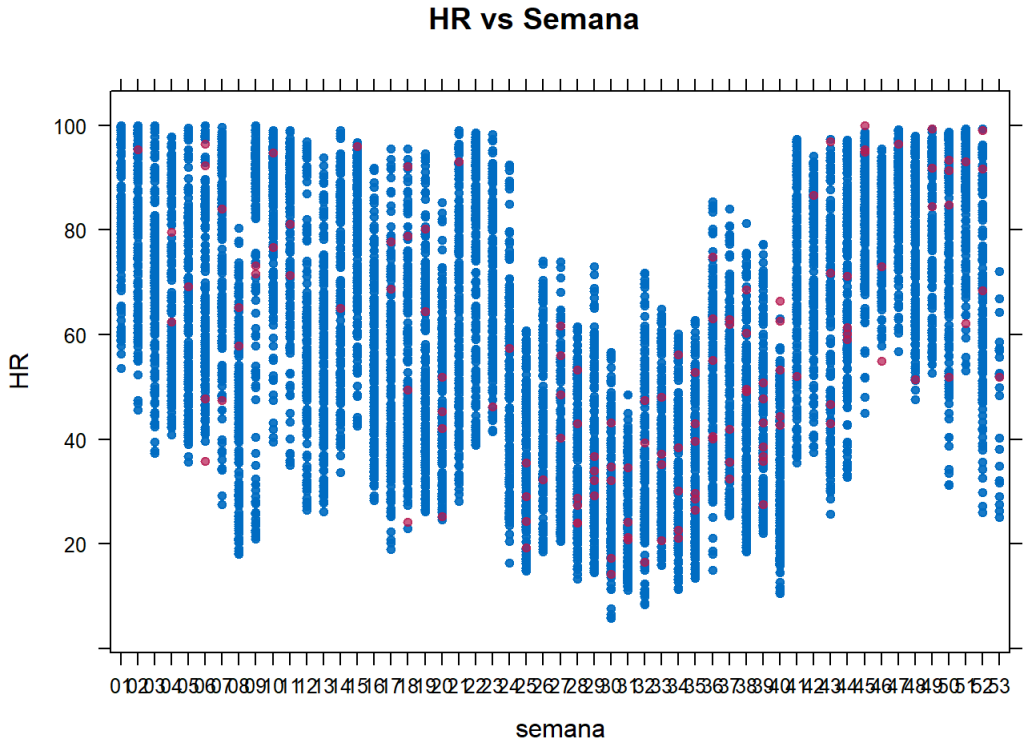

```
xyplot (imputation, Pres~semana, pch = 19, cex = 0.7, main = "Pres vs Semana")
```



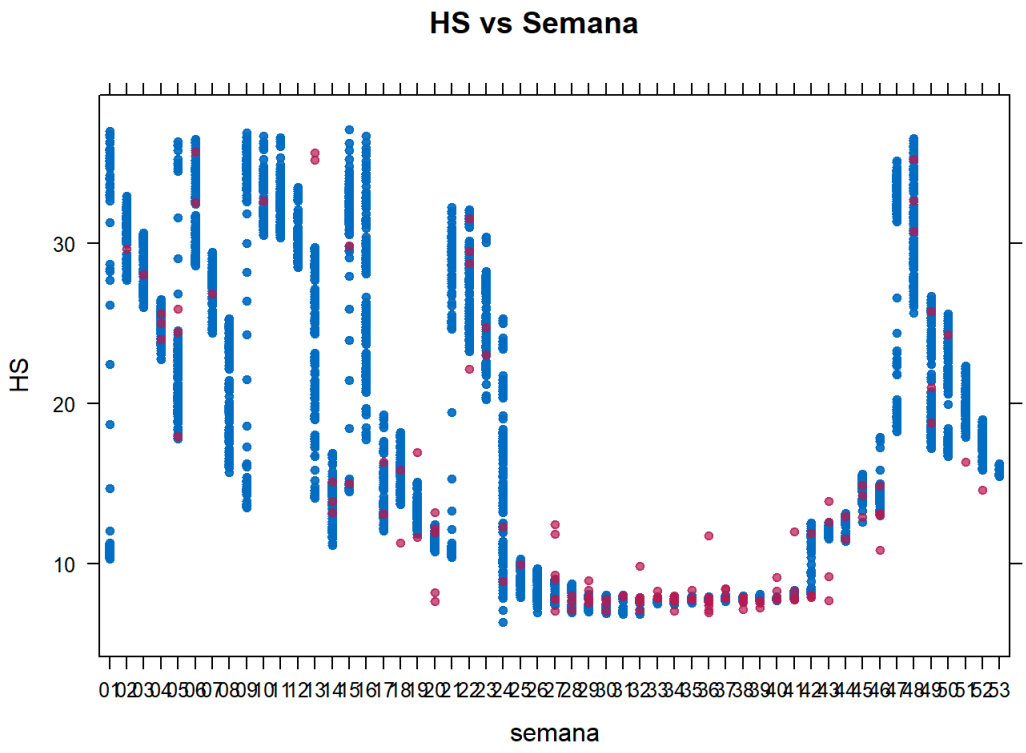

```
xyplot (imputation, Temp~semana, pch = 19, cex = 0.7, main = "Temp vs Semana")
```



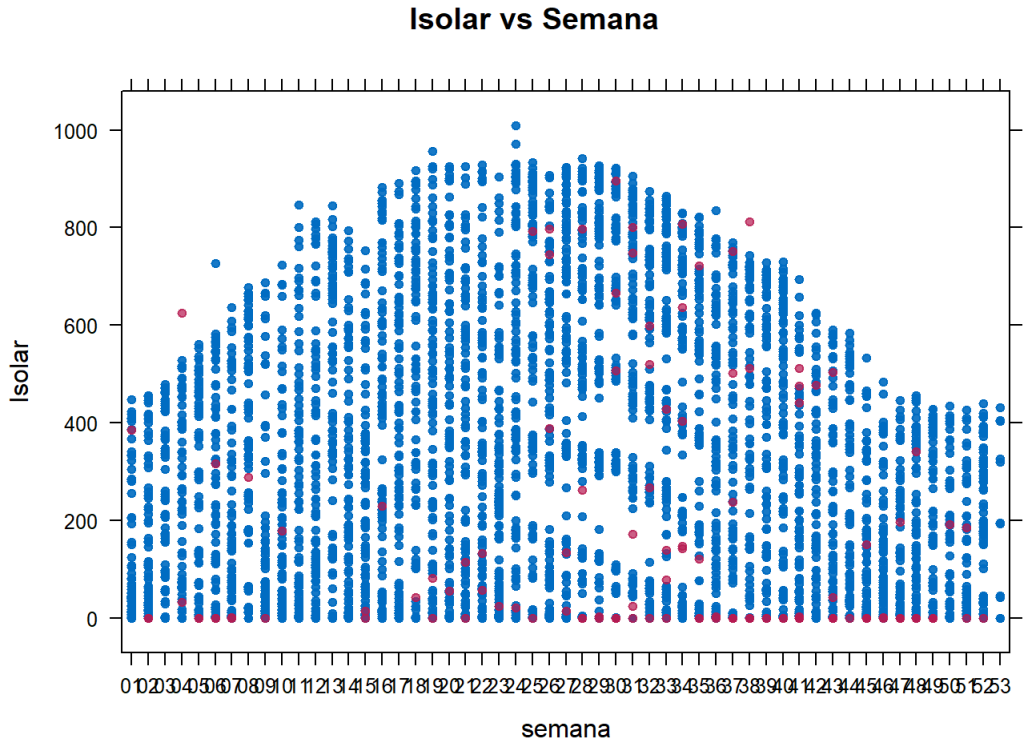

```
xyplot (imputation, HR~semana, pch = 19, cex = 0.7, main = "HR vs Semana")
```



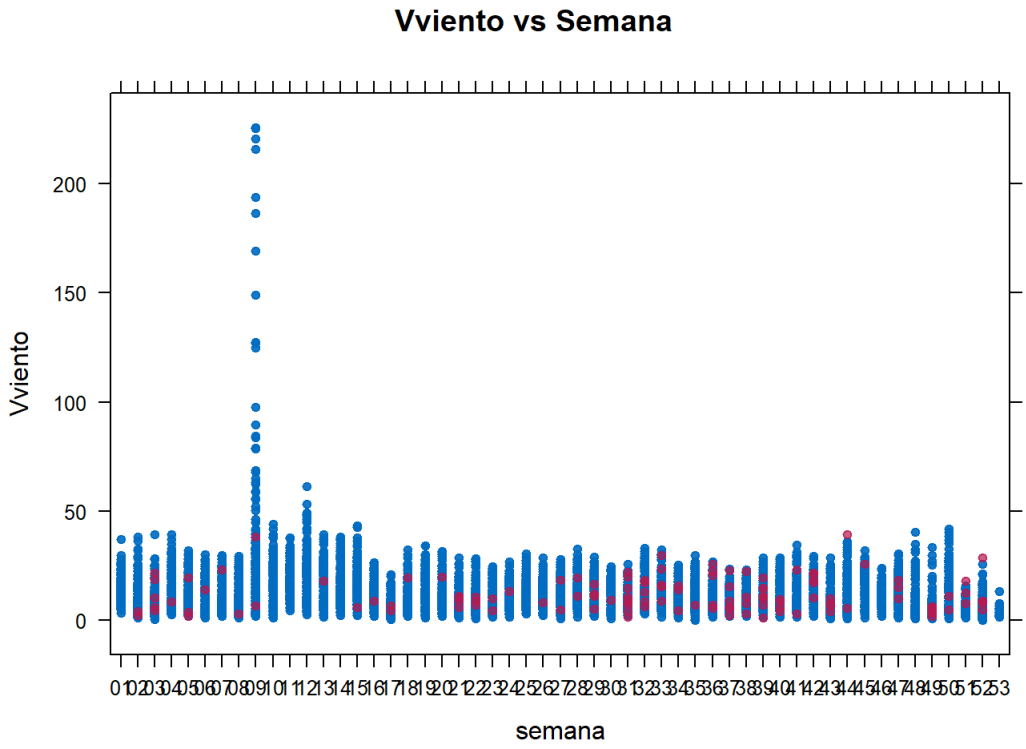

```
xyplot (imputation, HS~semana, pch = 19, cex = 0.7, main = "HS vs Semana")
```



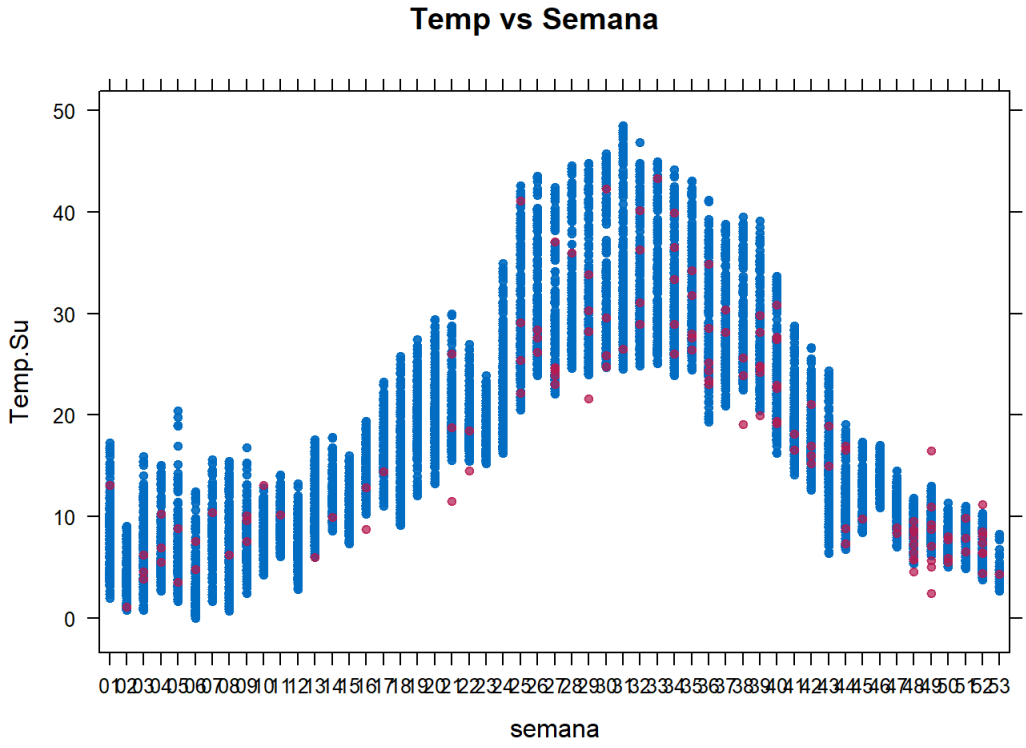

```
xyplot (imputation, Isolar~semana, pch = 19, cex = 0.7, main = "Isolar vs Semana")
```




```
xyplot (imputation, Vviento~semana, pch = 19, cex = 0.7, main = "Vviento vs Semana")
```




```
xyplot (imputation, Temp.Su~semana, pch = 19, cex = 0.7, main = "Temp vs Semana")
```




```
xyplot (imputation, Lluvia~semana, pch = 19, cex = 0.7, main = "Lluvia vs Semana")
```

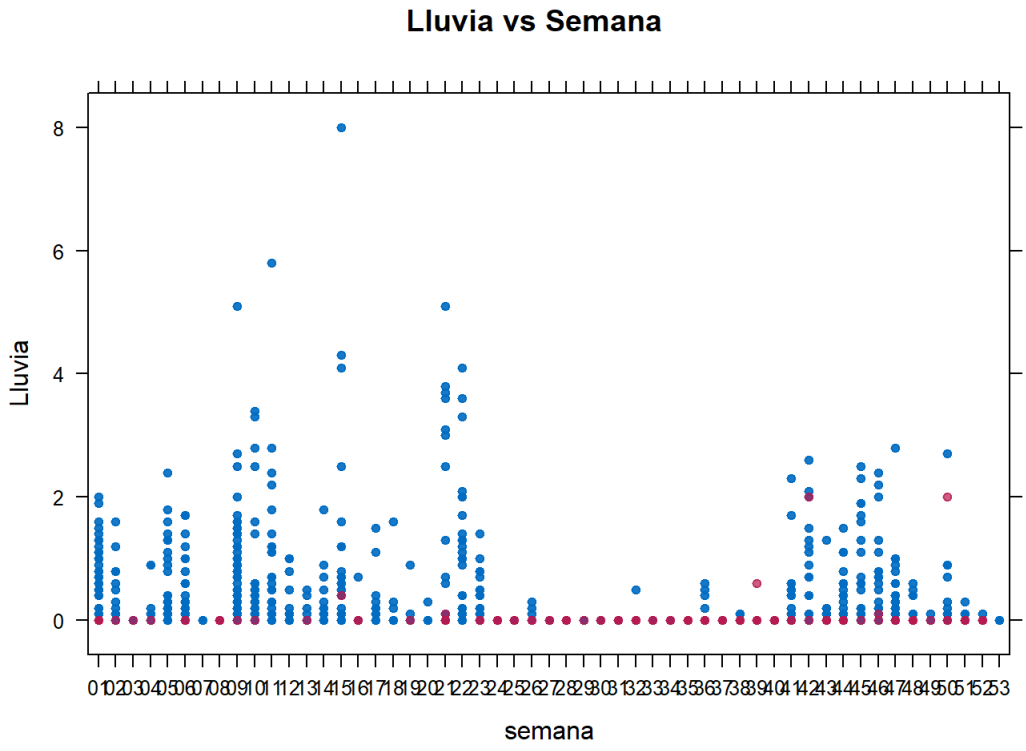
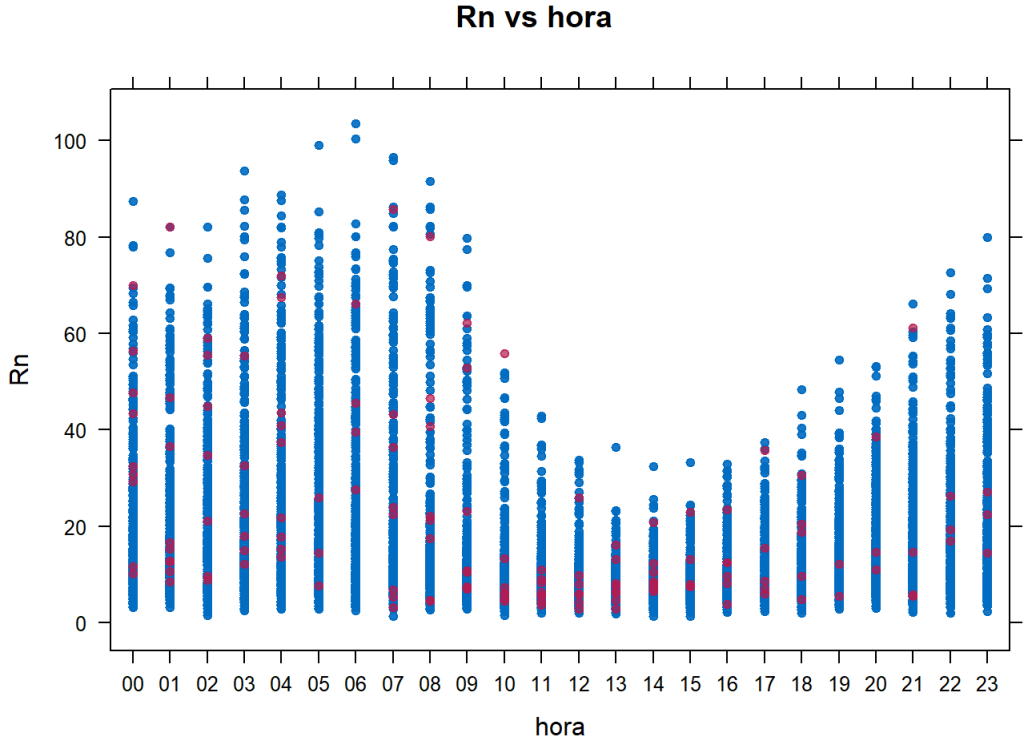


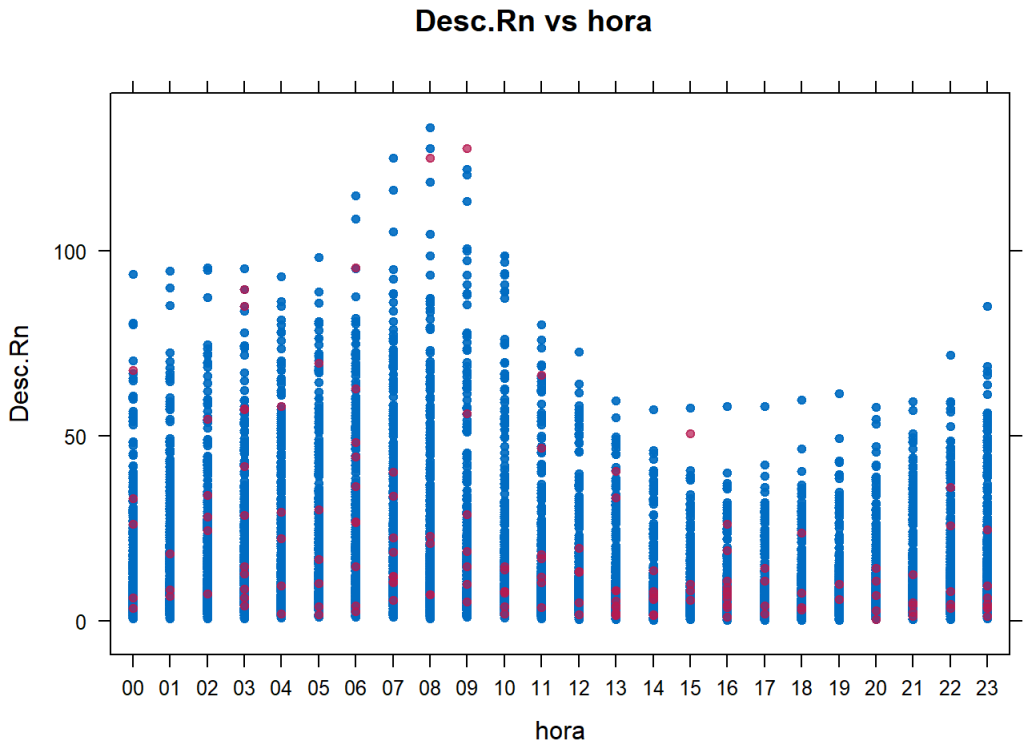
Figura 3.

Datos imputados vs variable hora.

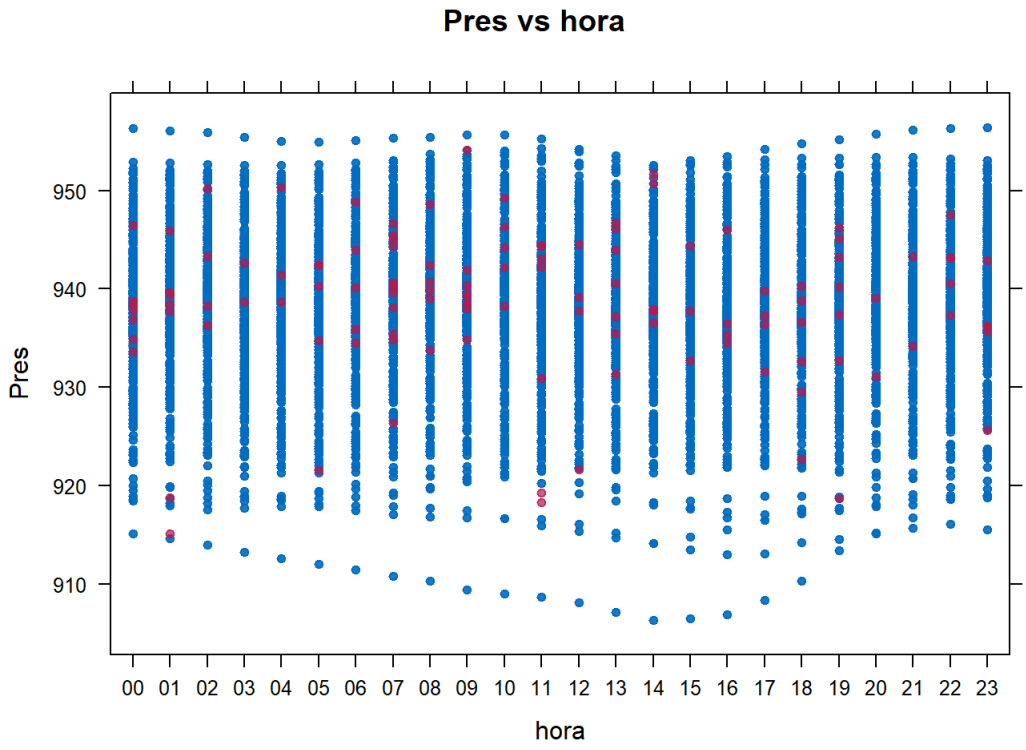
```
xyplot (imputation, Rn~hora, pch = 19, cex = 0.7, main = "Rn vs hora")
```



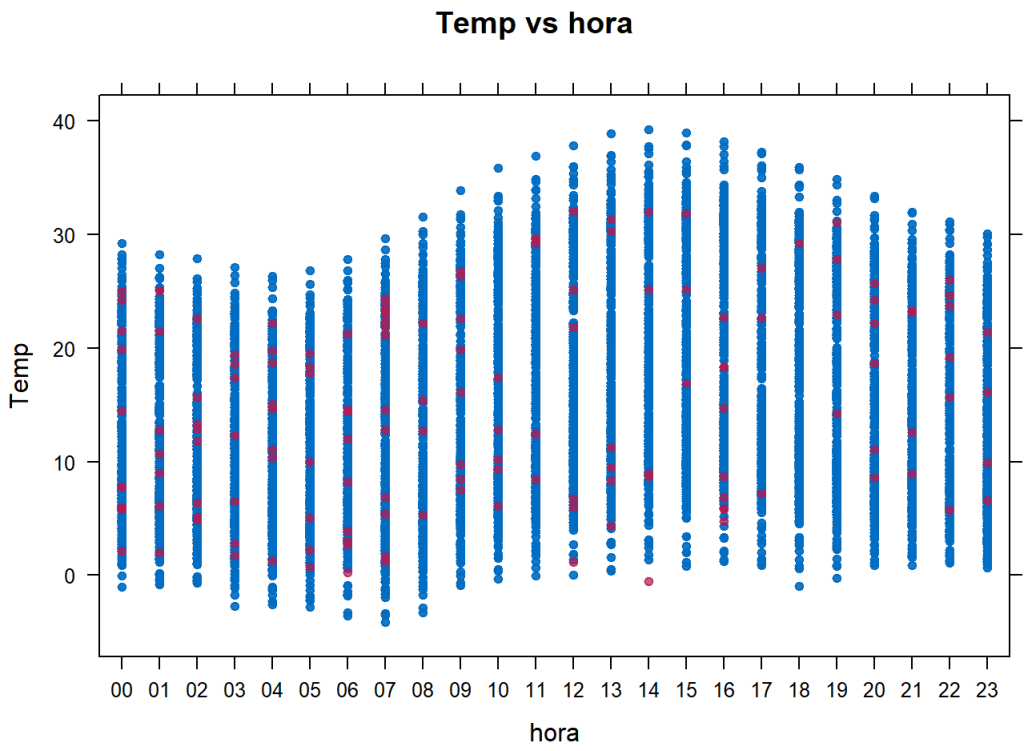

```
xyplot (imputation, Desc.Rn~hora, pch = 19, cex = 0.7, main = "Desc.Rn vs hora")
```



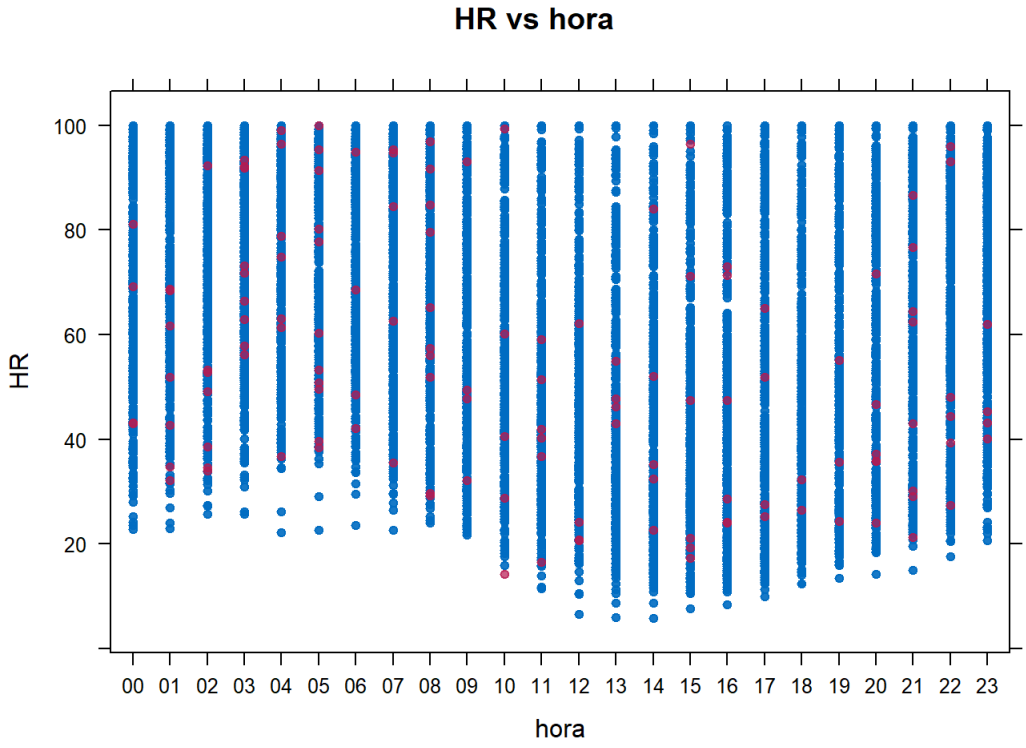

```
xyplot (imputation, Pres~hora, pch = 19, cex = 0.7, main = "Pres vs hora")
```



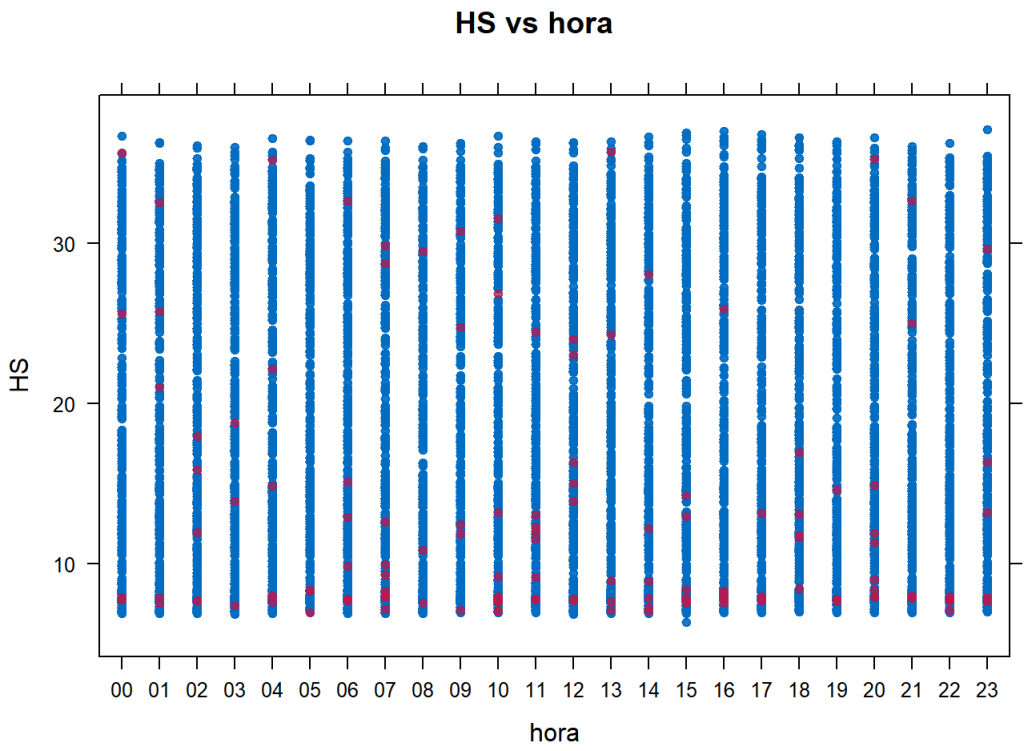

```
xyplot (imputation, Temp~hora, pch = 19, cex = 0.7, main = "Temp vs hora")
```



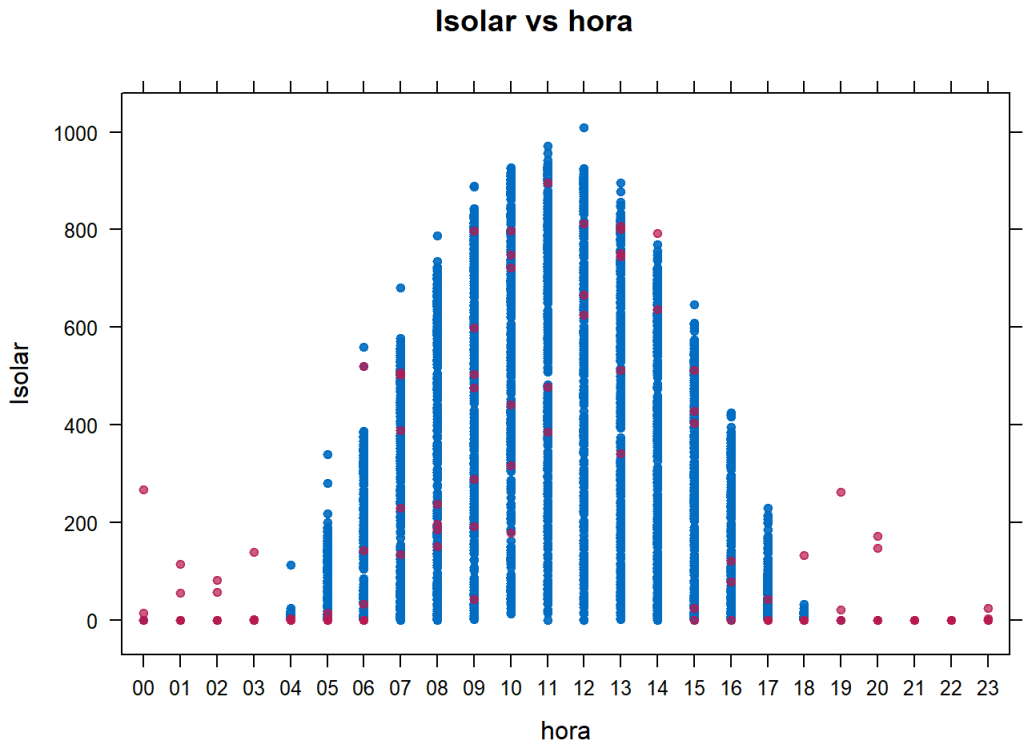

```
xyplot (imputation, HR~hora, pch = 19, cex = 0.7, main = "HR vs hora")
```



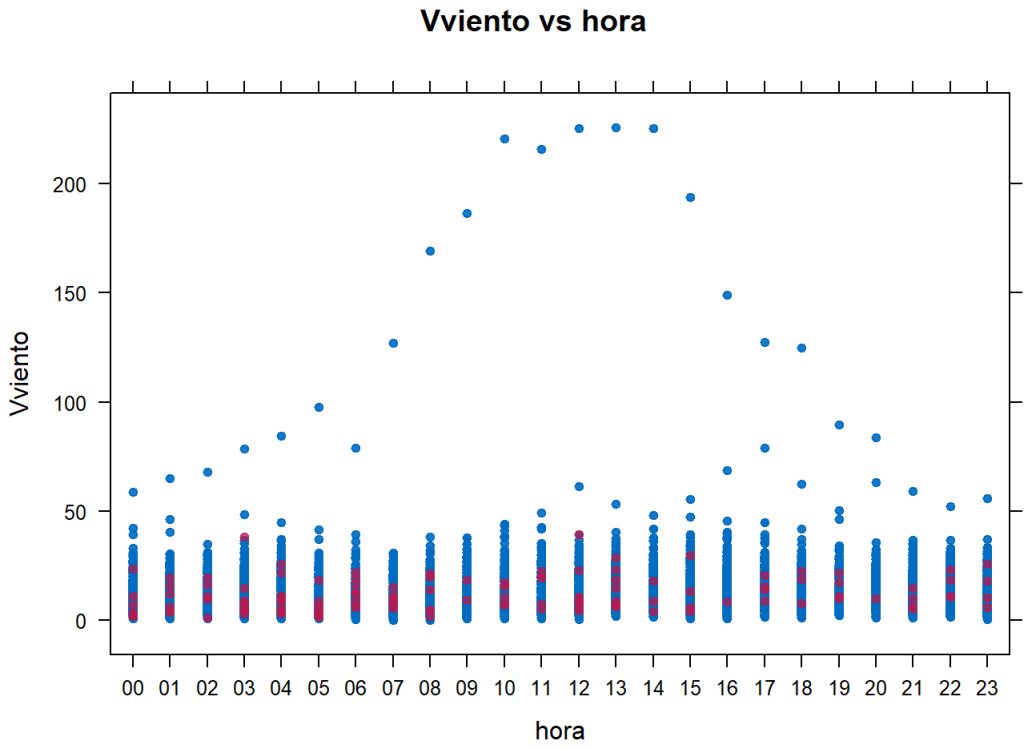

```
xyplot (imputation, HS~hora, pch = 19, cex = 0.7, main = "HS vs hora")
```



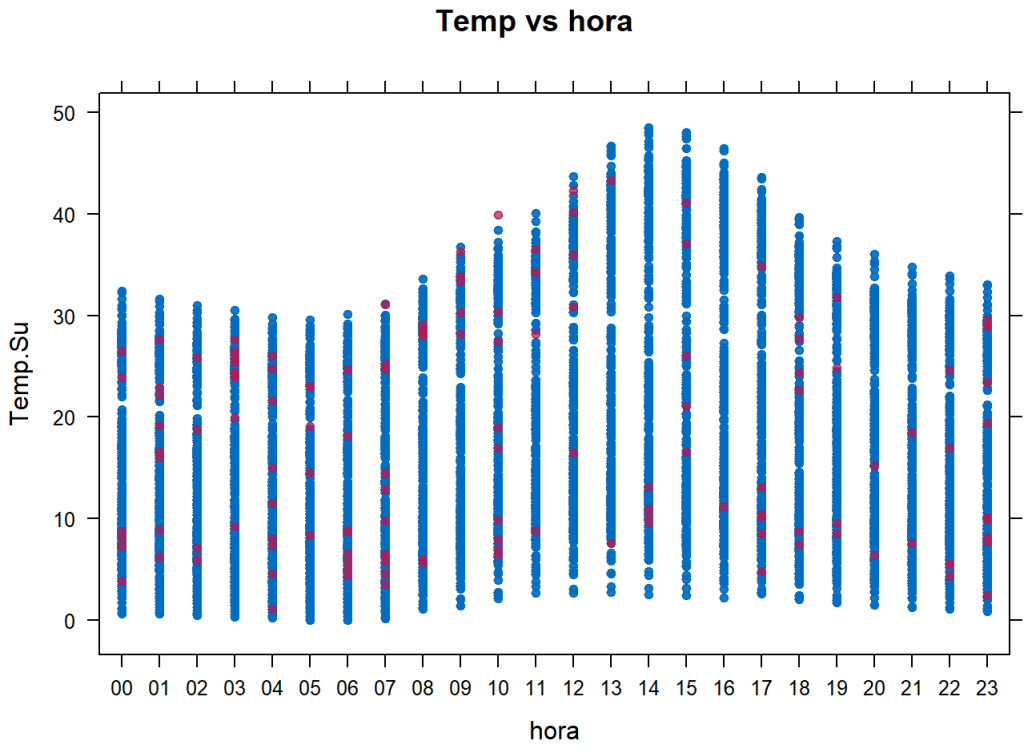

```
xyplot (imputation, Isolar~hora, pch = 19, cex = 0.7, main = "Isolar vs hora")
```




```
xyplot (imputation, Vviento~hora, pch = 19, cex = 0.7, main = "Vviento vs hora")
```




```
xyplot (imputation, Temp.Su~hora, pch = 19, cex = 0.7, main = "Temp vs hora")
```




```
xyplot (imputation, Lluvia~hora, pch = 19, cex = 0.7, main = "Lluvia vs hora")
```

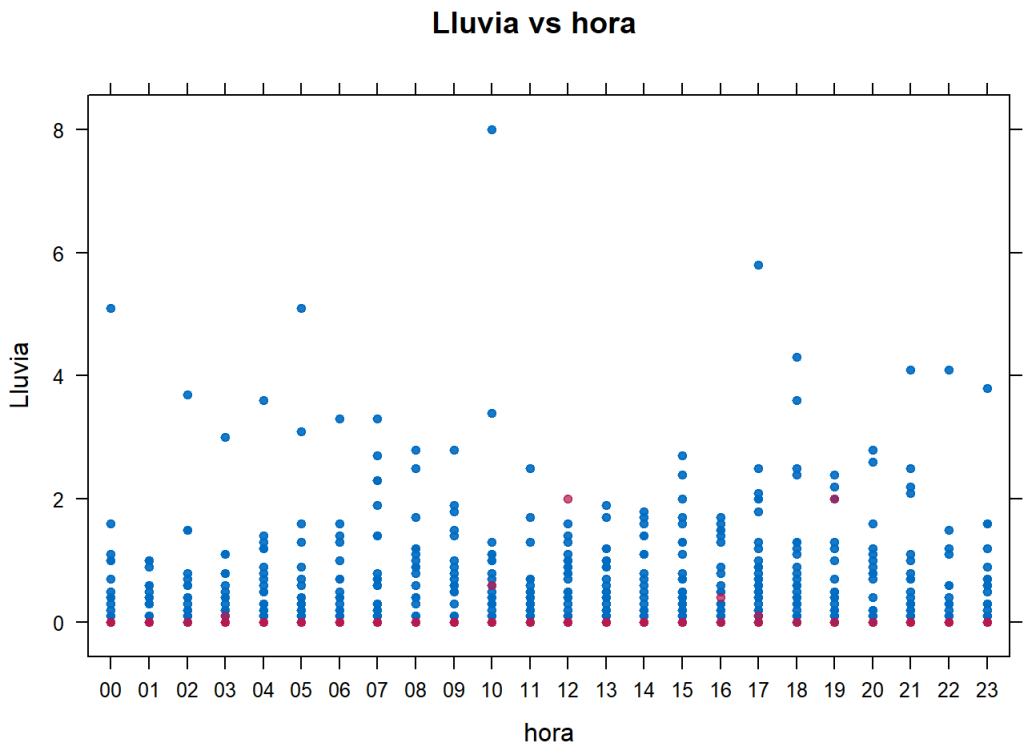
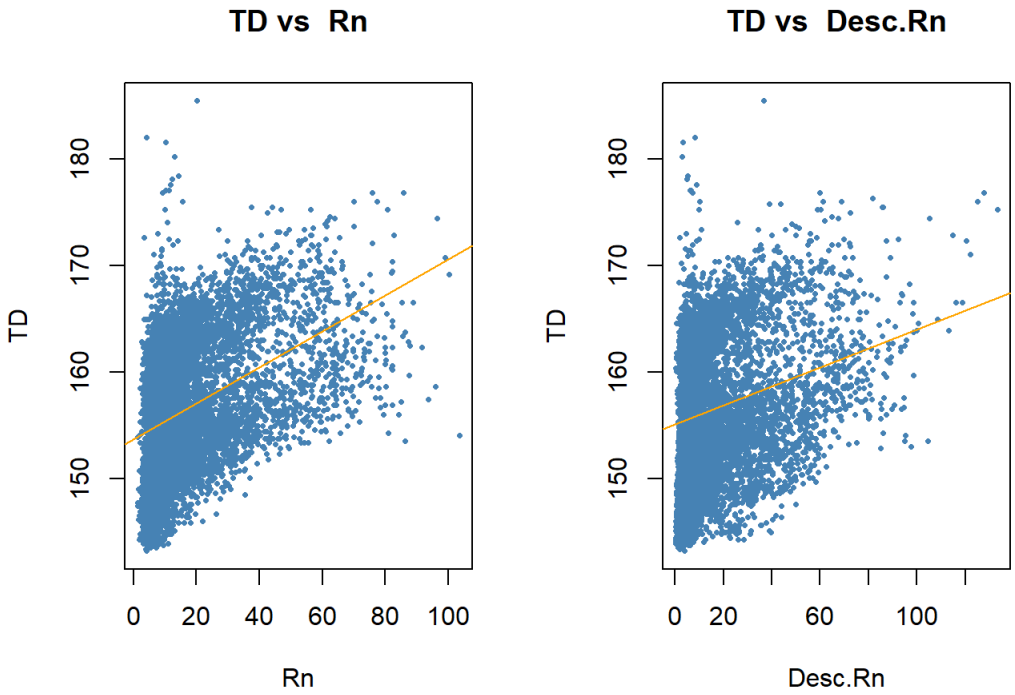
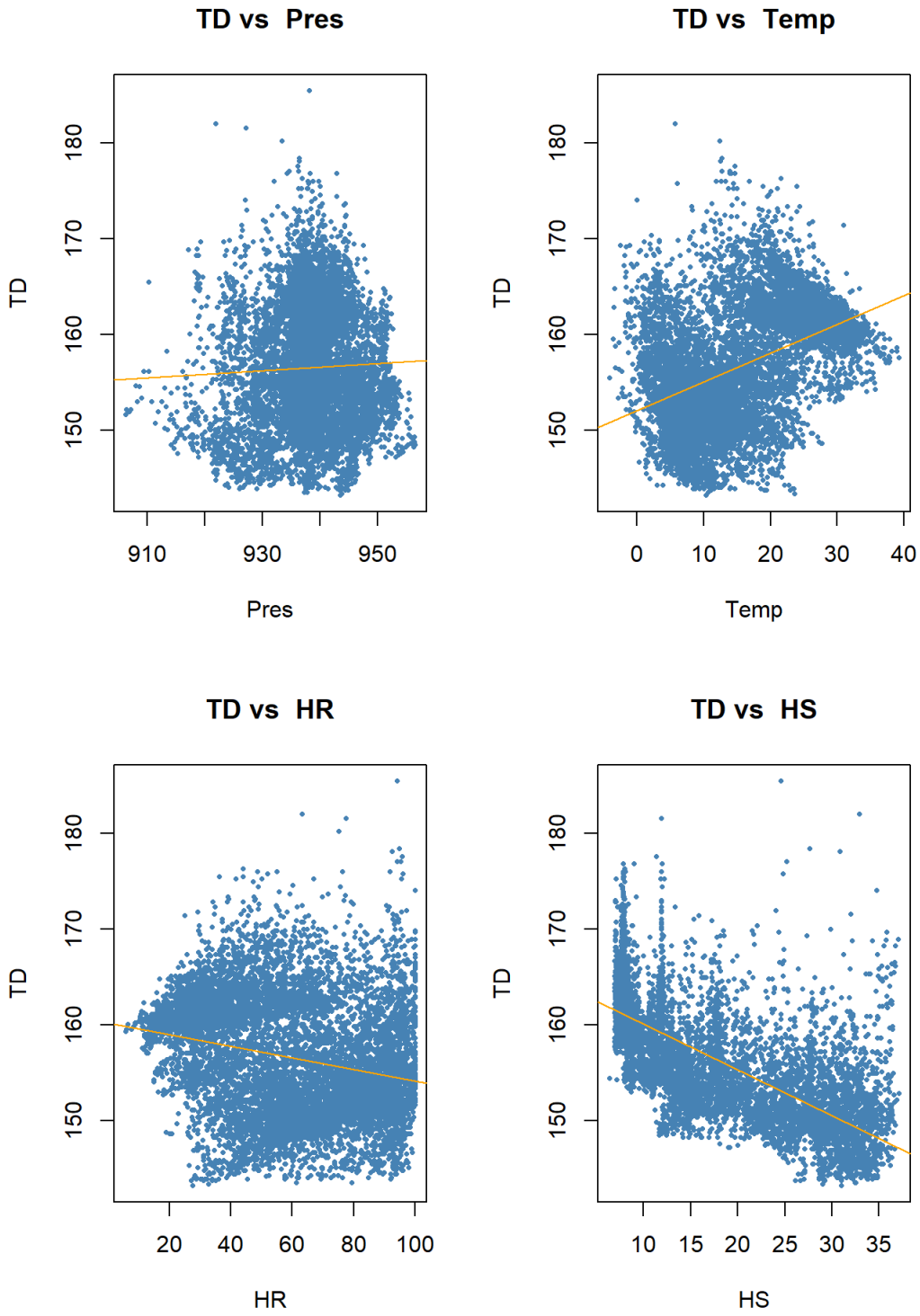


Figura 4.

Diagramas de dispersión para las variables cuantitativas predictoras y la target cuantitiva “TD”.

```
par(mfrow=c(1,2))
for (i in (colnames(input[,-c(11,12,13,14,15)]))){
  plot( input[[i]],targetCont,
        pch = 16,
        main = paste("TD vs ", i),
        xlab = i,
        ylab = "TD",
        col = "steelblue",
        cex = 0.5)
  abline(lm(TD~input[[i]], data = datos), col = "orange")
}
```




TD vs Pres
TD
150
160
170
180
910
930
950
Pres
TD vs Temp
TD
150
160
170
180
0
10
20
30
40
Temp
TD vs HR
TD
150
160
170
180
20
40
60
80
100
HR
TD vs HS
TD
150
160
170
180
10
15
20
25
30
35
HS

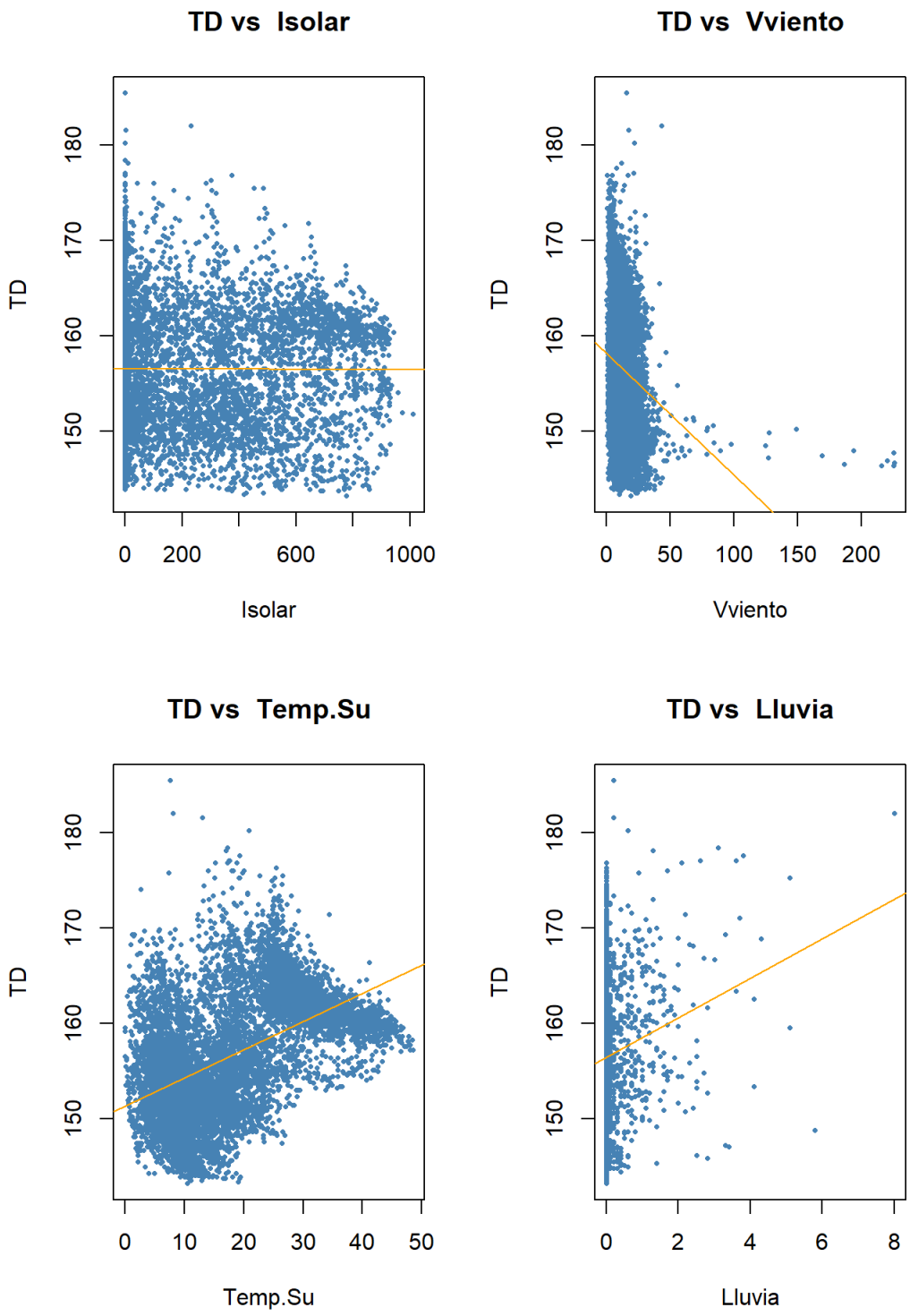
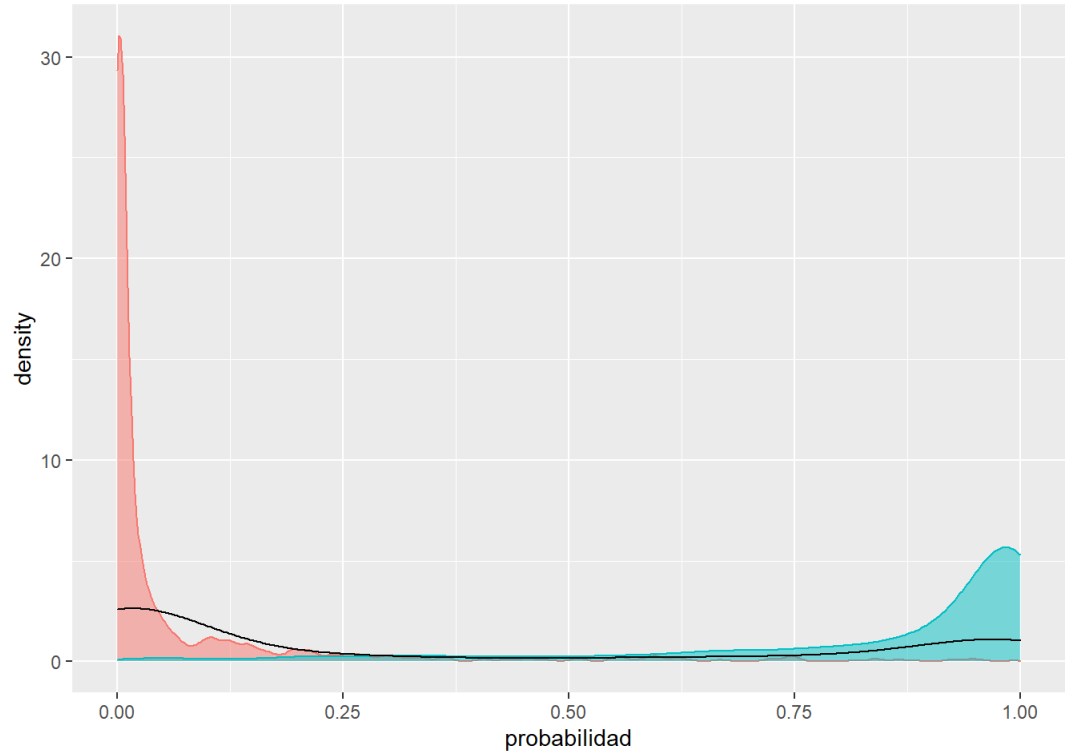


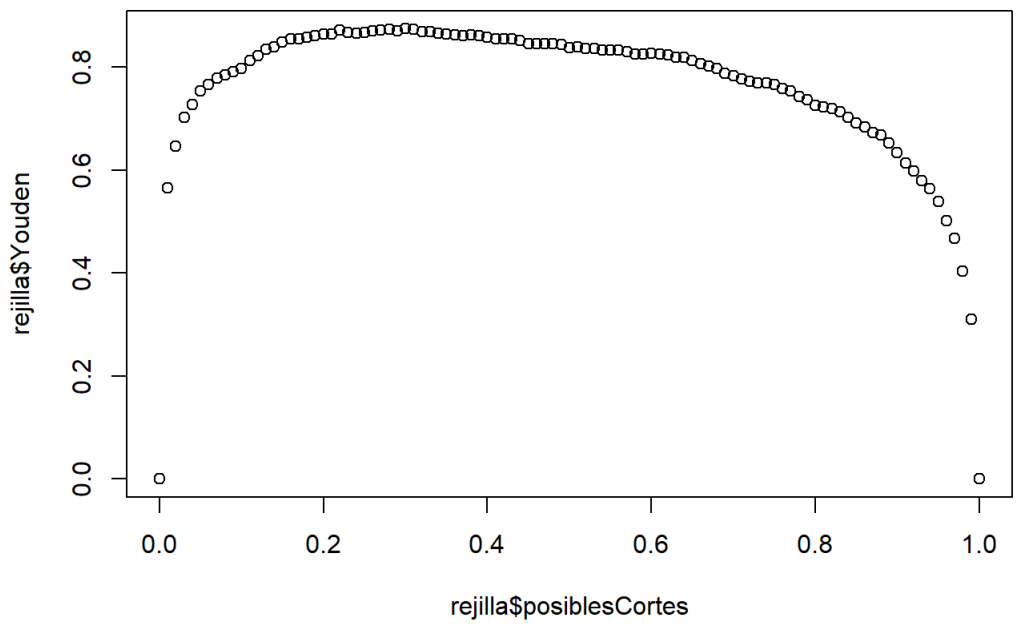
Figura 5.

Gráficos de rejilla para evaluar los mejores puntos de corte:

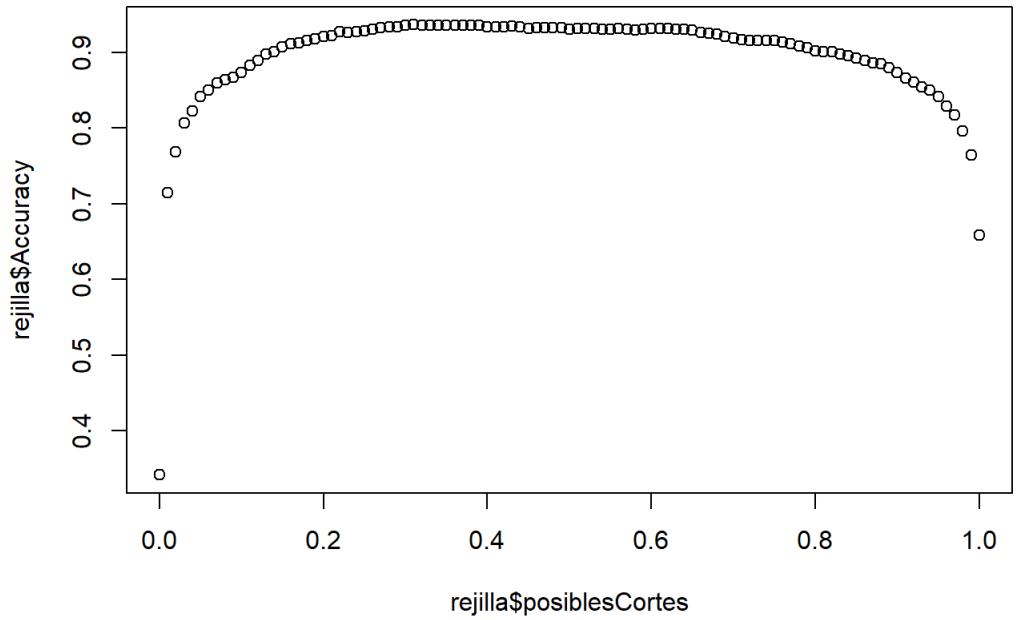
```
hist_targetbinaria(predict(modeloDefinitivo_bin, newdata=data_test,type="response"),data_test$targetBin,"probabilidad")
```




```
#sensEspCorte(modeloDefinitivo_bin,data_test,"targetBin",0.5,"1")
#sensEspCorte(modeloDefinitivo_bin,data_test,"targetBin",0.75,"1")

## generamos una rejilla de puntos de corte
posiblesCortes<-seq(0,1,0.01)

rejilla<-data.frame(t(rbind(posiblesCortes,sapply(posiblesCortes,function(x) sensEspCorte(modeloDefinitivo_b
in,data_test,"targetBin",x,"1")))))

rejilla$Youden<-rejilla$Sensitivity+rejilla$Specificity-1
plot(rejilla$posiblesCortes,rejilla$Youden)
```




```
plot(rejilla$posiblesCortes,rejilla$Accuracy)
```




```
rejilla$posiblesCortes[which.max(rejilla$Youden)]
```

```
## [1] 0.3
```

```
rejilla$posiblesCortes[which.max(rejilla$Accuracy)]
```

```
## [1] 0.31
```

```
#Los comparamos
sensEspCorte(modeloDefinitivo_bin,data_test,"targetBin",0.3,"1")
```

```
##       Accuracy    Sensitivity    Specificity Pos Pred Value Neg Pred Value
##      0.9360366      0.9414716      0.9332177      0.8796875      0.9684968
```

```
sensEspCorte(modeloDefinitivo_bin,data_test,"targetBin",0.31,"1")
```

```
##       Accuracy    Sensitivity    Specificity Pos Pred Value Neg Pred Value
##      0.9366077      0.9381271      0.9358196      0.8834646      0.9668459
```