**Lab3: Correlation plot**

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**Code:**

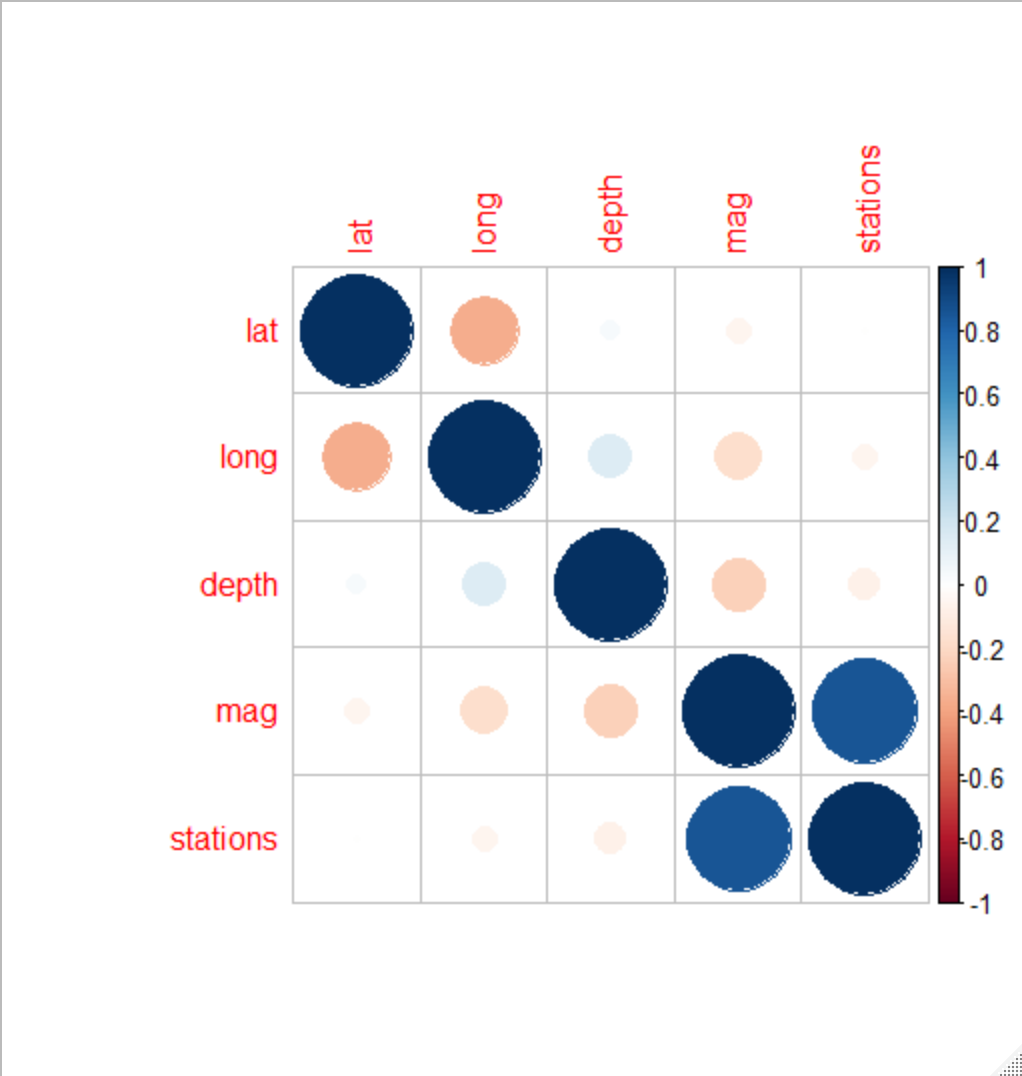
install.packages("corrplot")

library(corrplot)

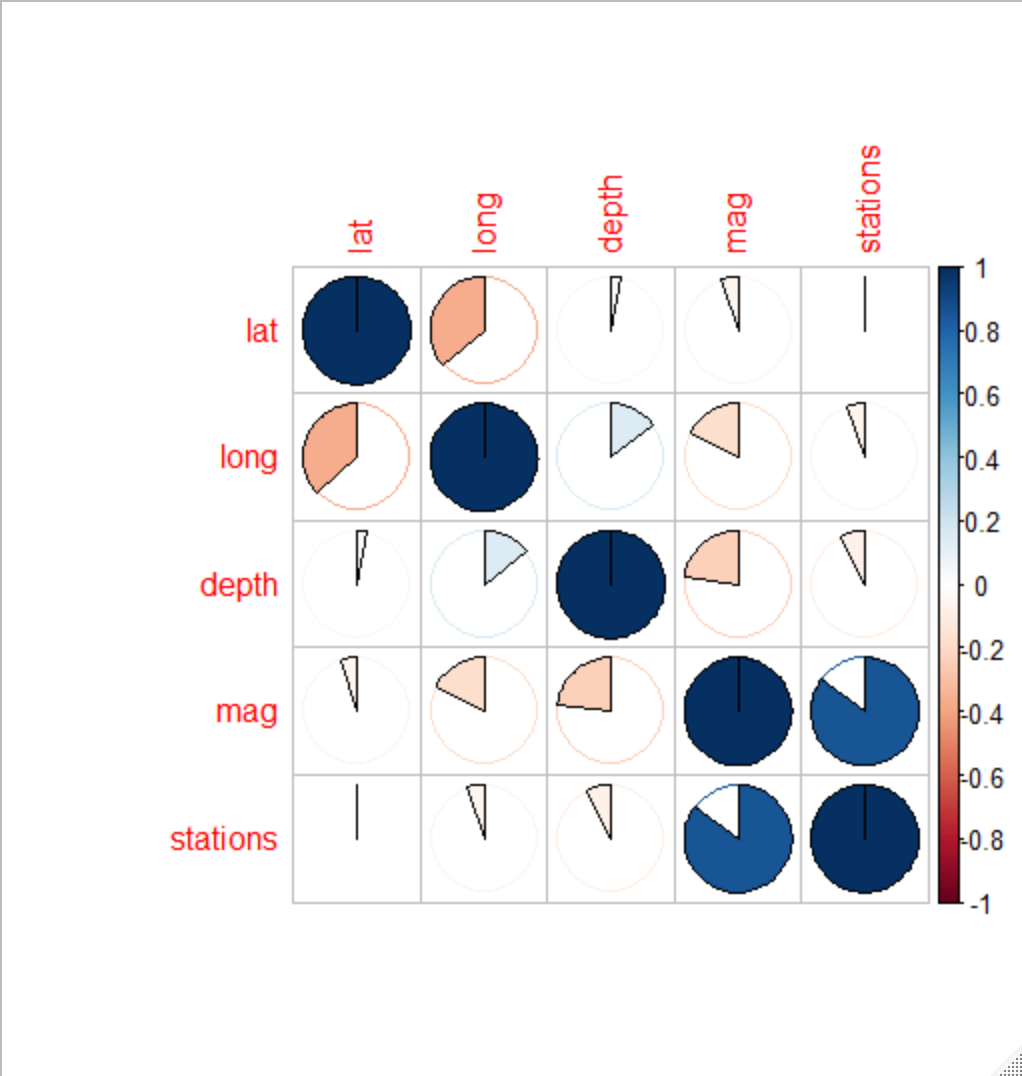
dataset=quakes

cm=cor(dataset)

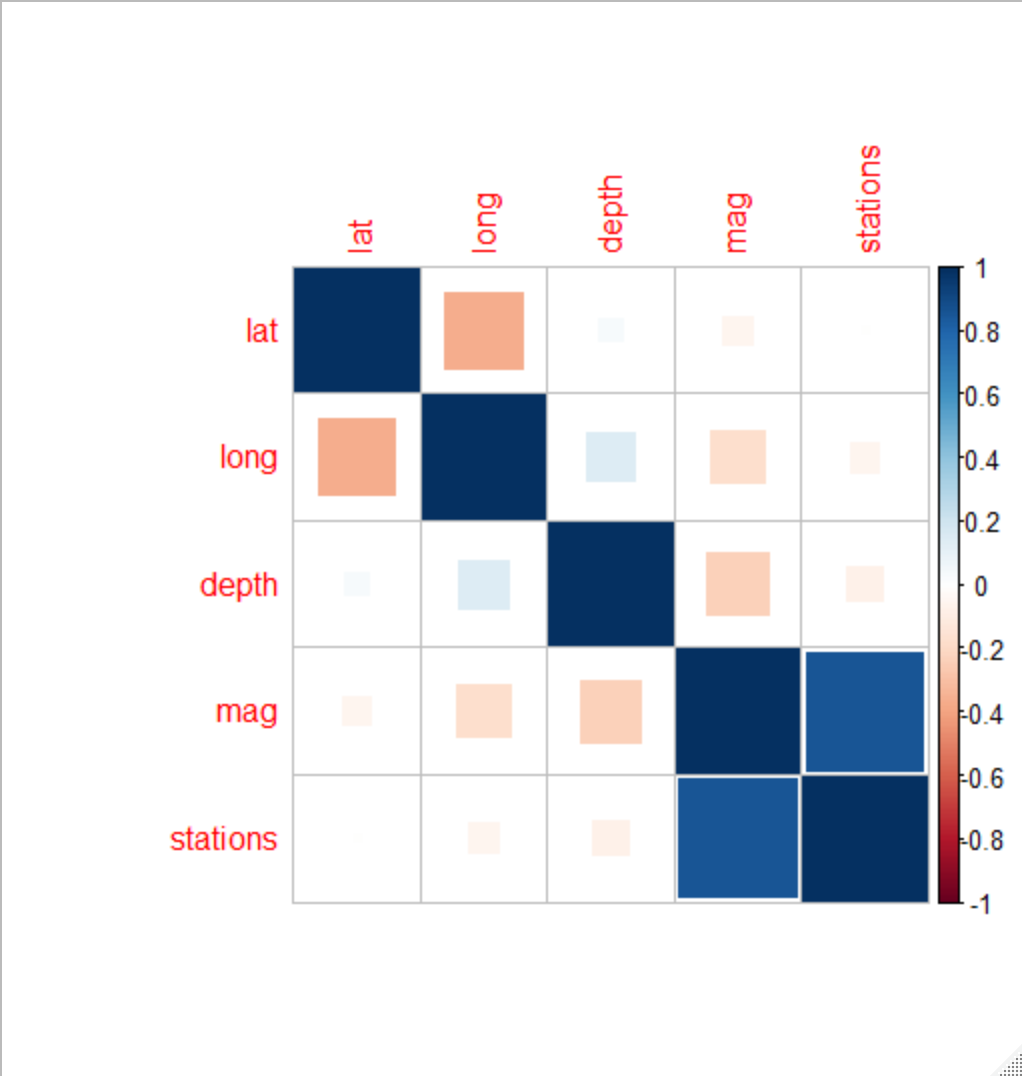
corrplot(cm, method="circle")



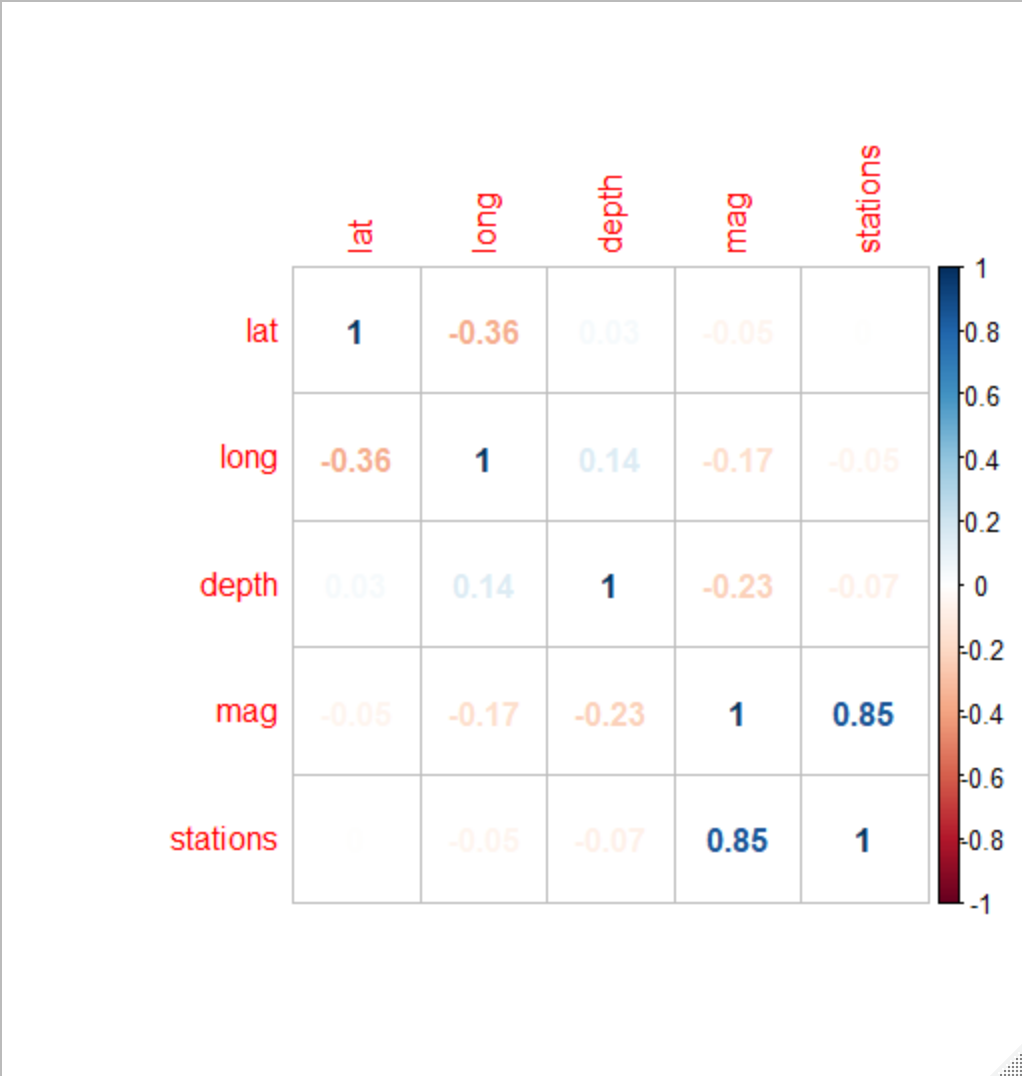
corrplot(cm, method="pie")



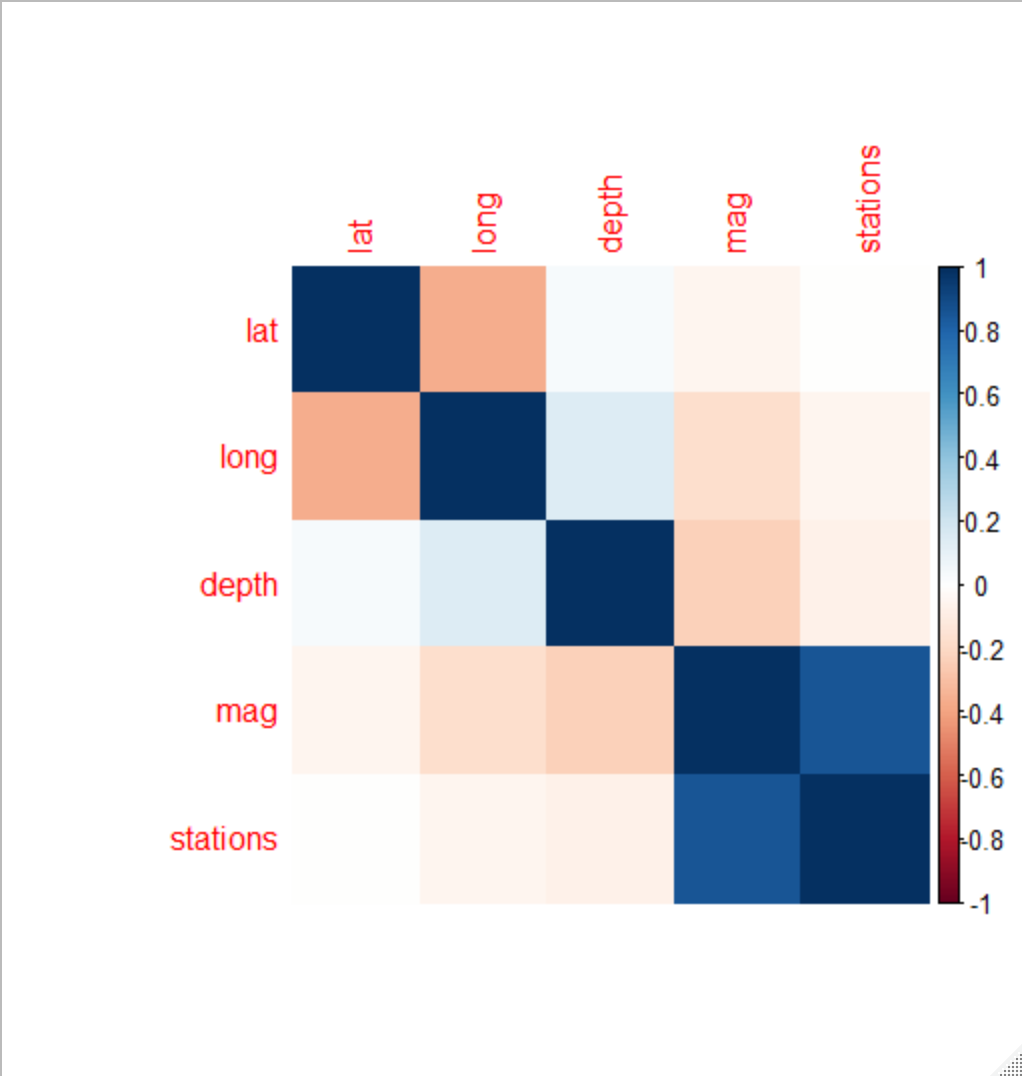
corrplot(cm, method="square")



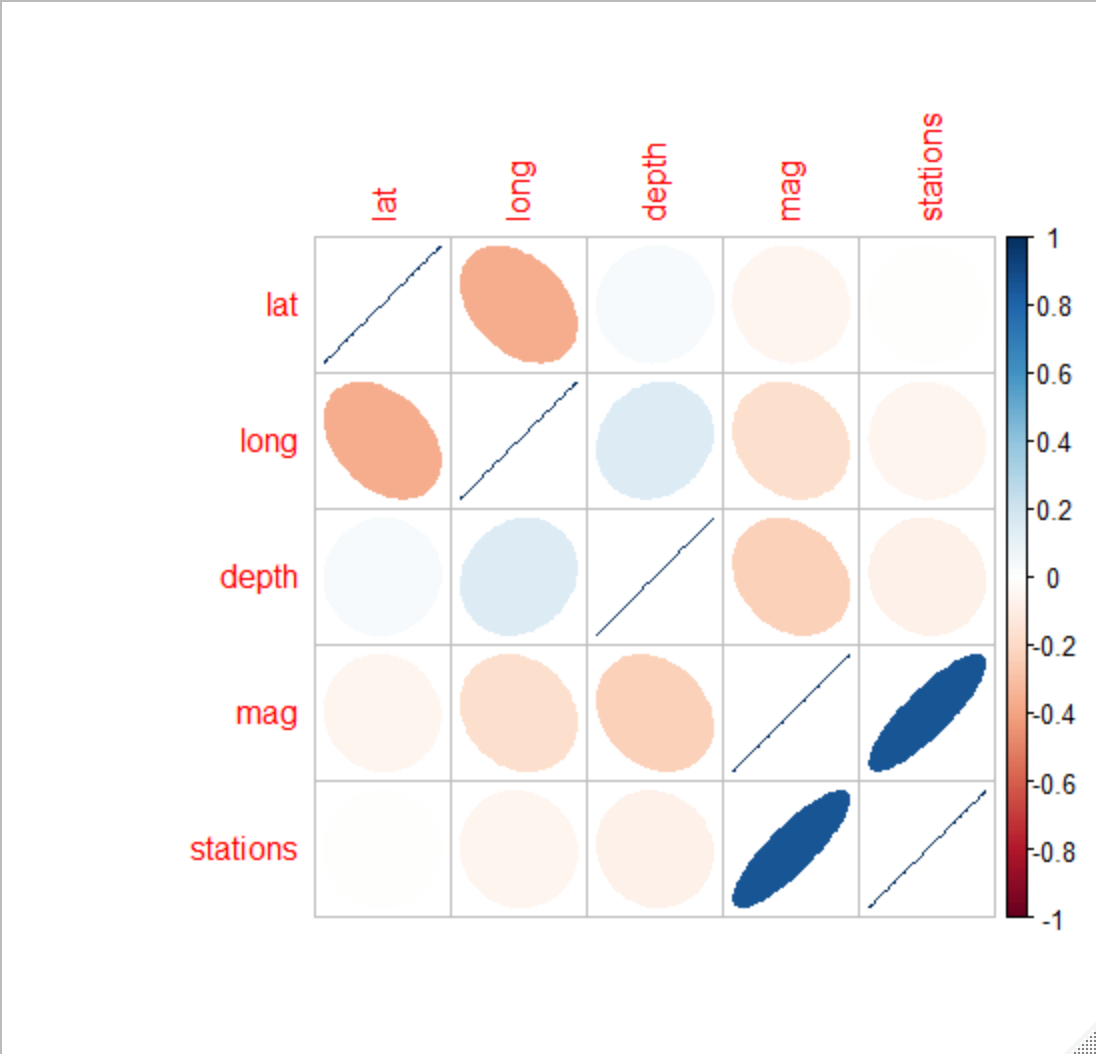
corrplot(cm, method="number")



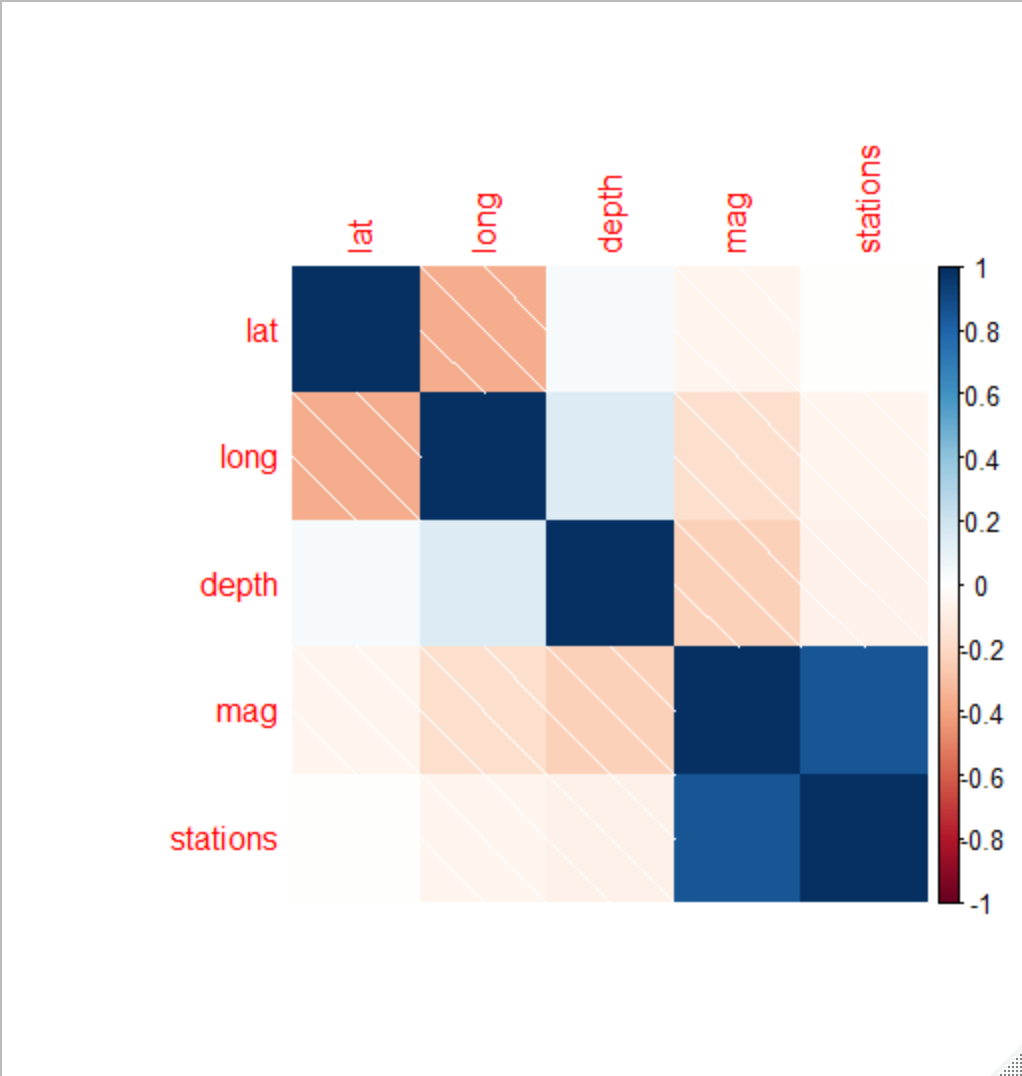
corrplot(cm, method="color")



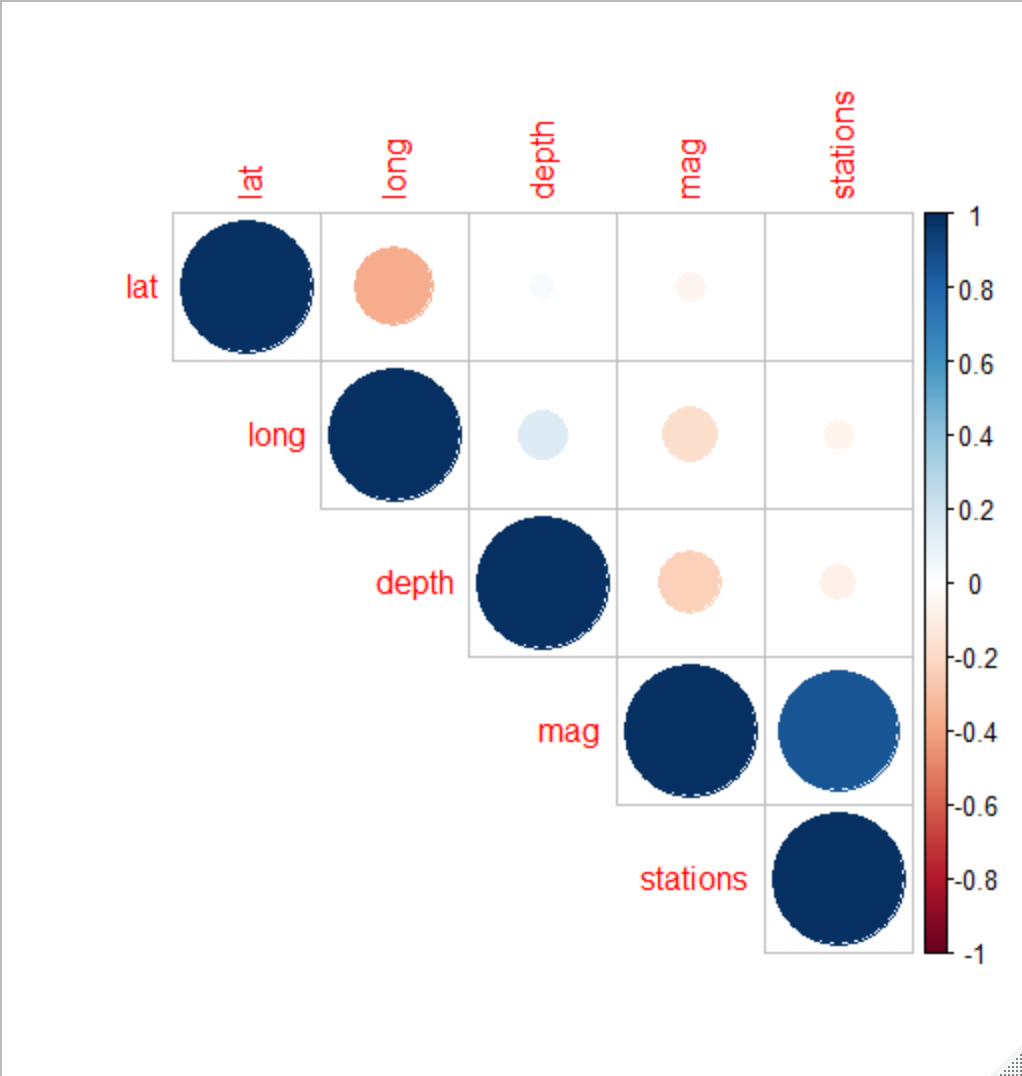
corrplot(cm, method="ellipse")



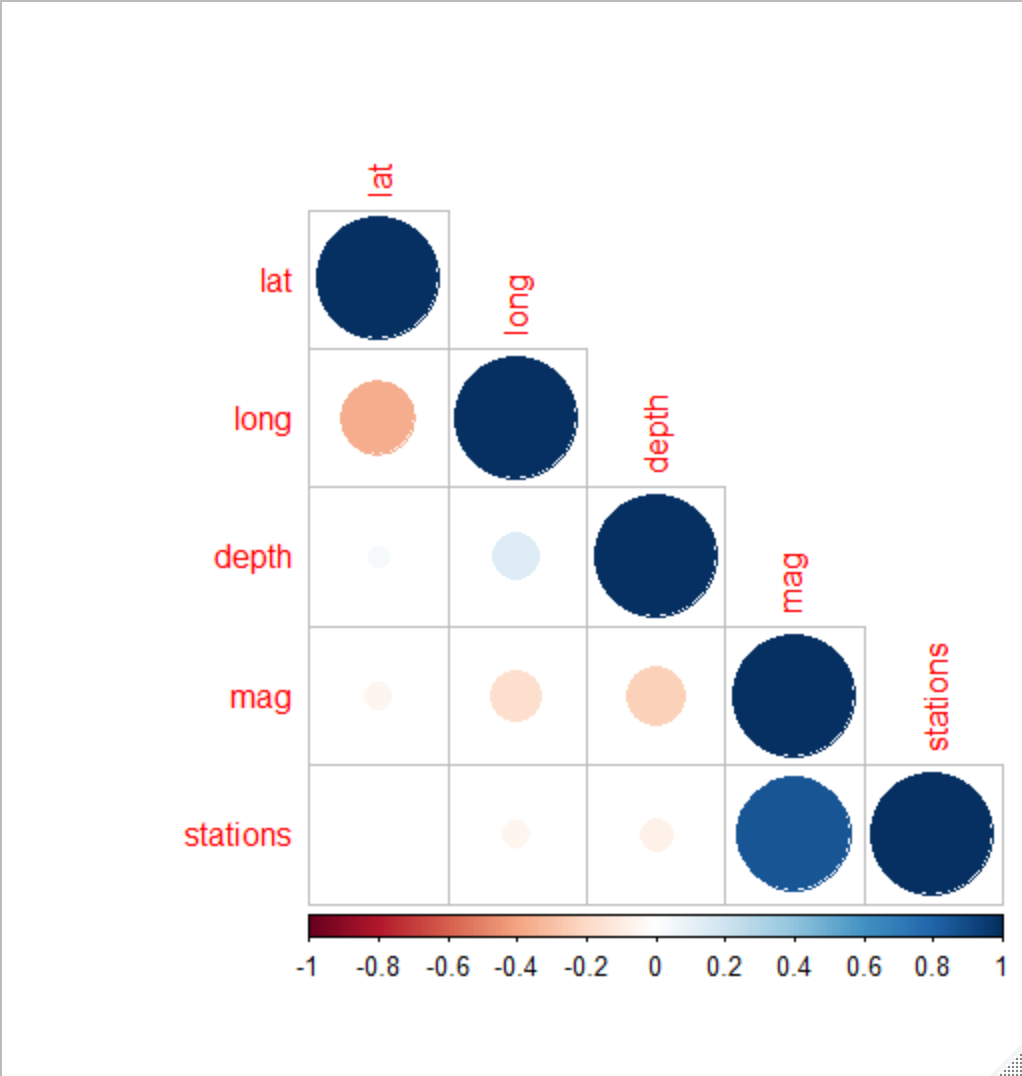
corrplot(cm, method="shade")



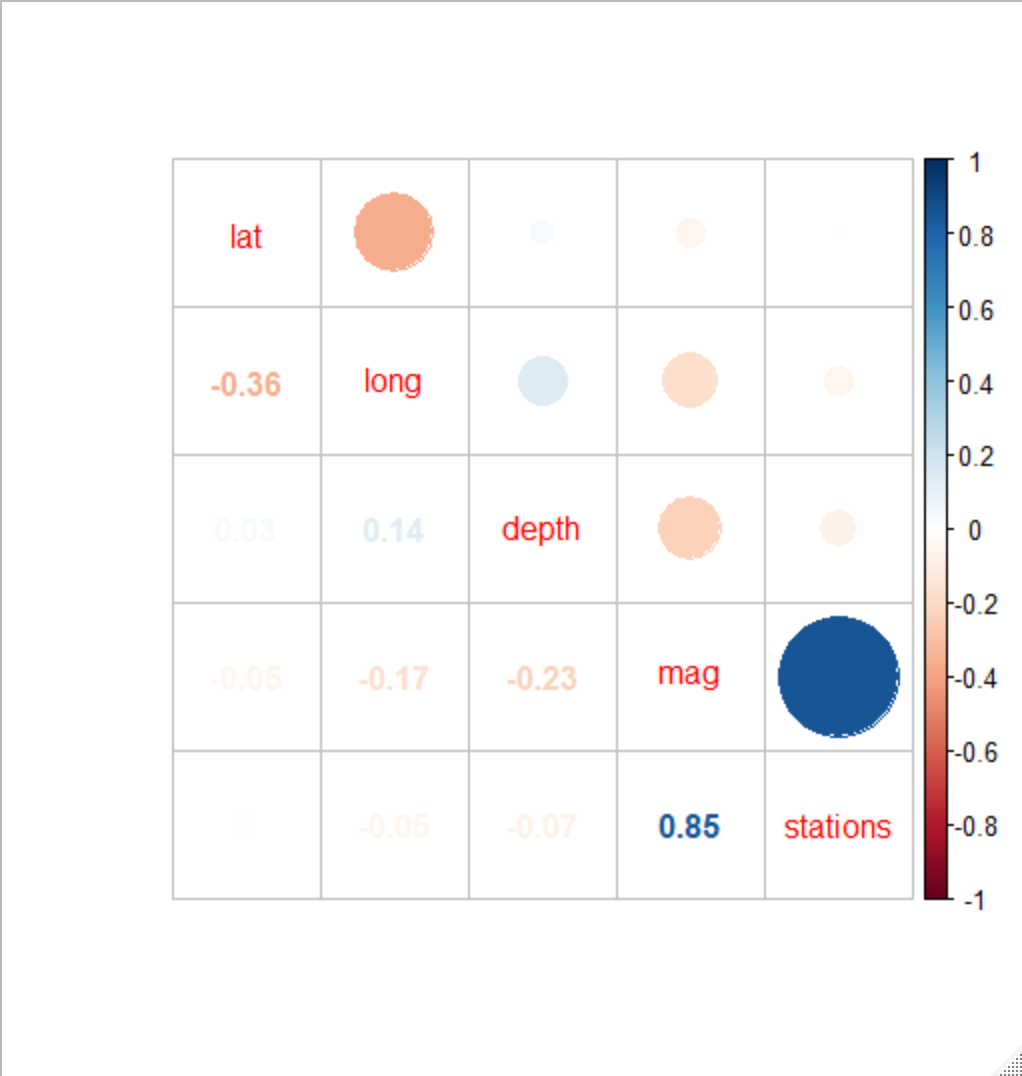
corrplot(cm, type="upper")



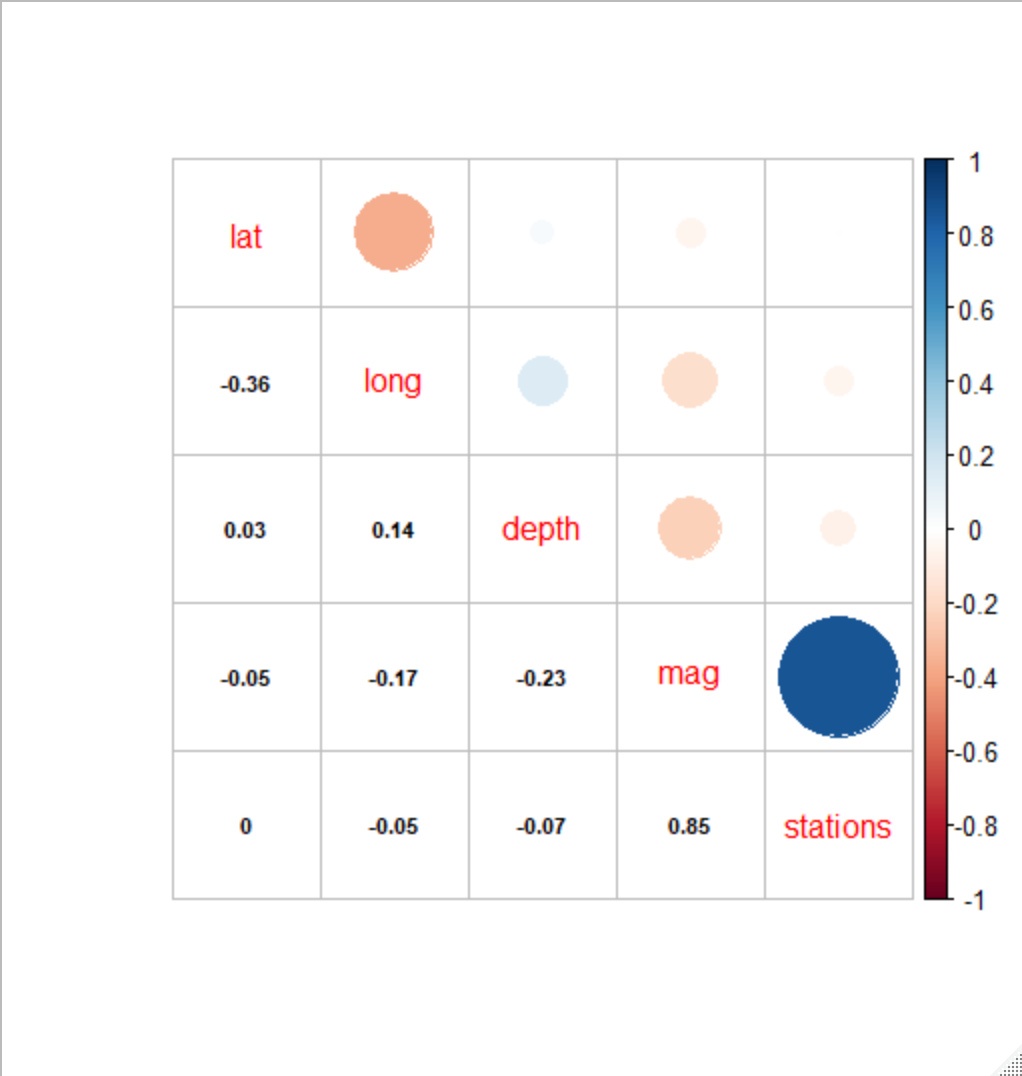
corrplot(cm, type="lower")



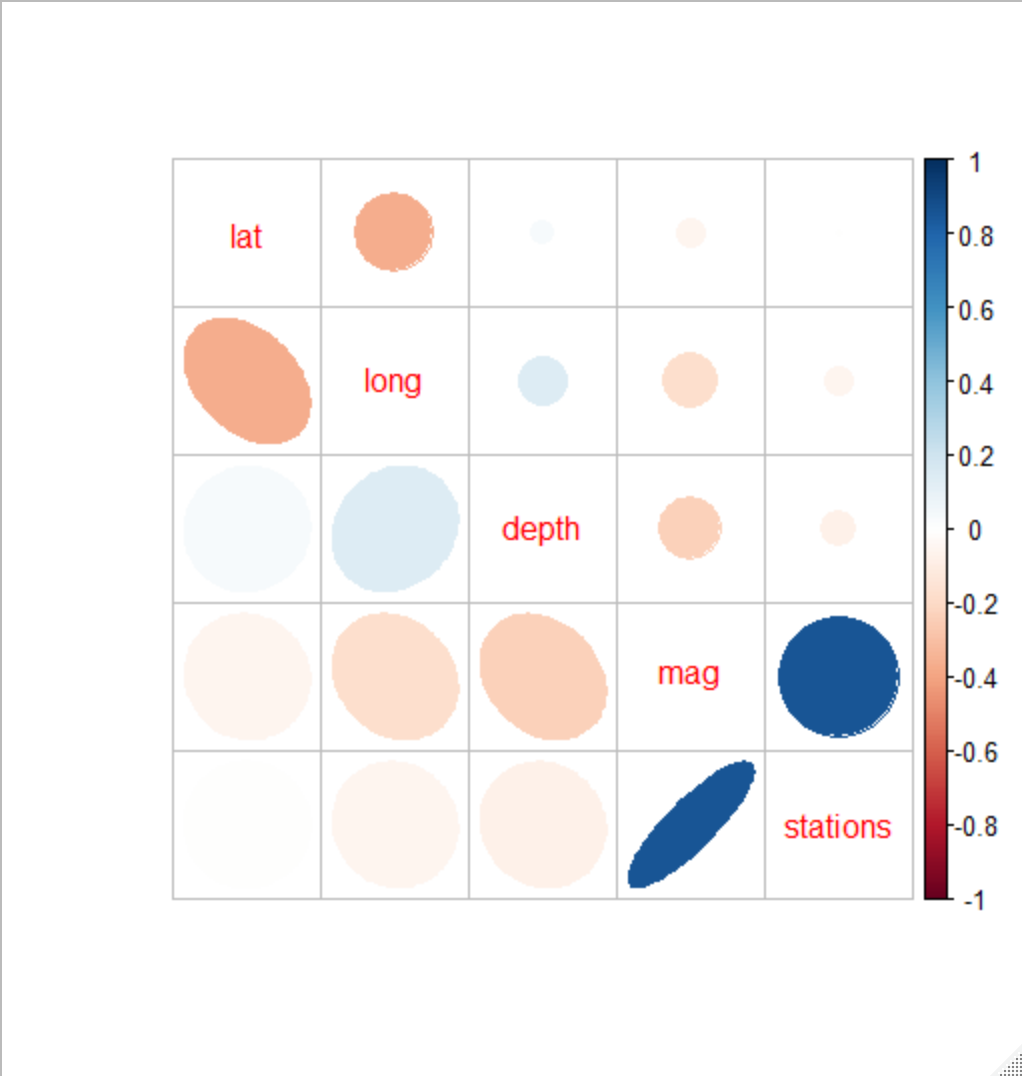
corrplot.mixed(cm)



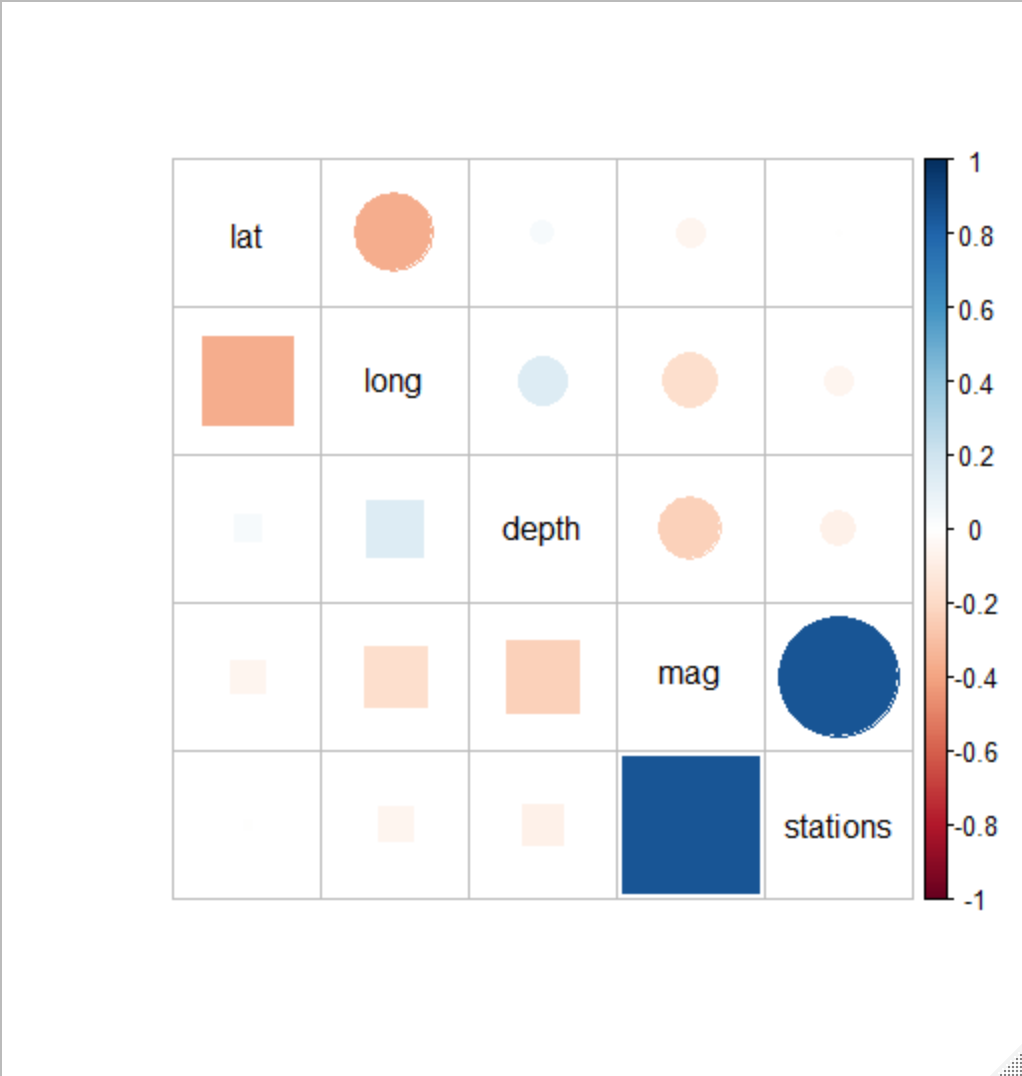
corrplot.mixed(cm, lower.col = "black", number.cex = .7)



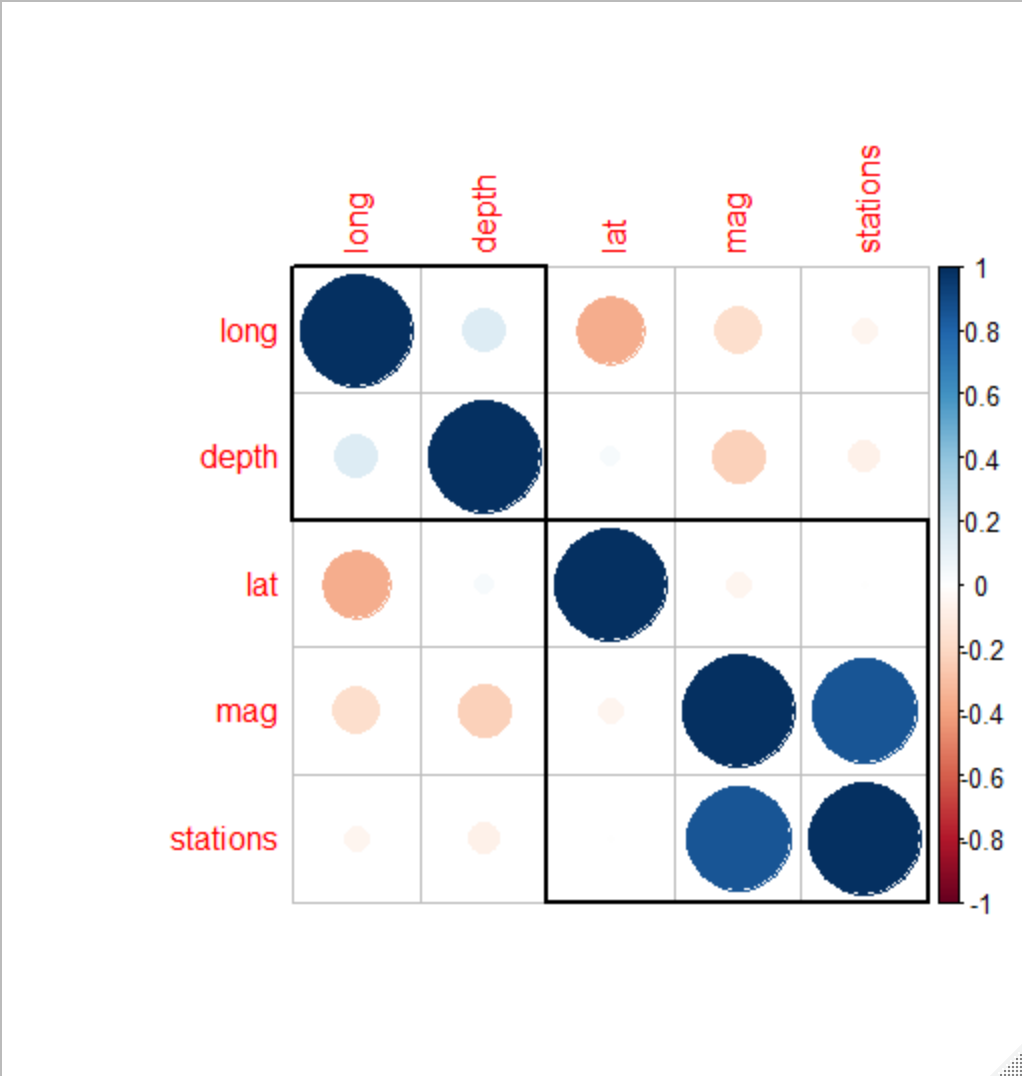
corrplot.mixed(cm, lower = "ellipse", upper = "circle")



corrplot.mixed(cm, lower = "square", upper = "circle", tl.col = "black")



corrplot(cm, order = "hclust", addrect = 2)



**Positive correlations are displayed in blue color and negative correlations are displayed in red color.**

dataset\_select=dataset[dataset$lat<(-20) & dataset$long>180 & dataset$depth>200 & dataset$mag<(4.5) & dataset$stations<20, ]

#ScatterPlot with encircling

ggplot(dataset, aes(x=lat, y=long))+

geom\_point(aes(col=depth, size=mag))+geom\_smooth(method="loess", se=F)+

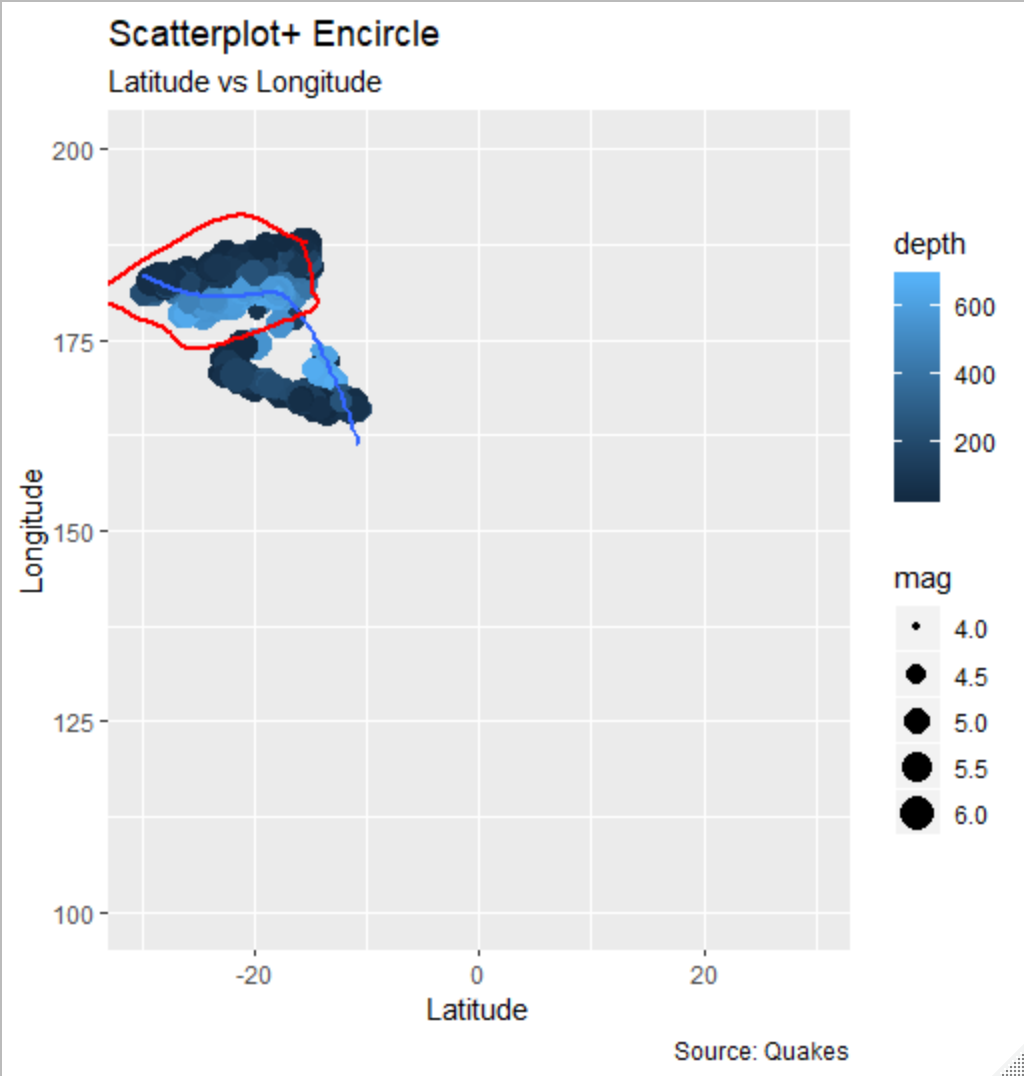
xlim(c(-30, 30))+

ylim(c(100,200))+

geom\_encircle(aes(x=lat, y=long), data=dataset\_select, color="red", size=2, expand=0.08)+

labs(subtitle="Latitude vs Longitude",

y="Longitude", x="Latitude", title="Scatterplot+ Encircle", caption="Source: Quakes")

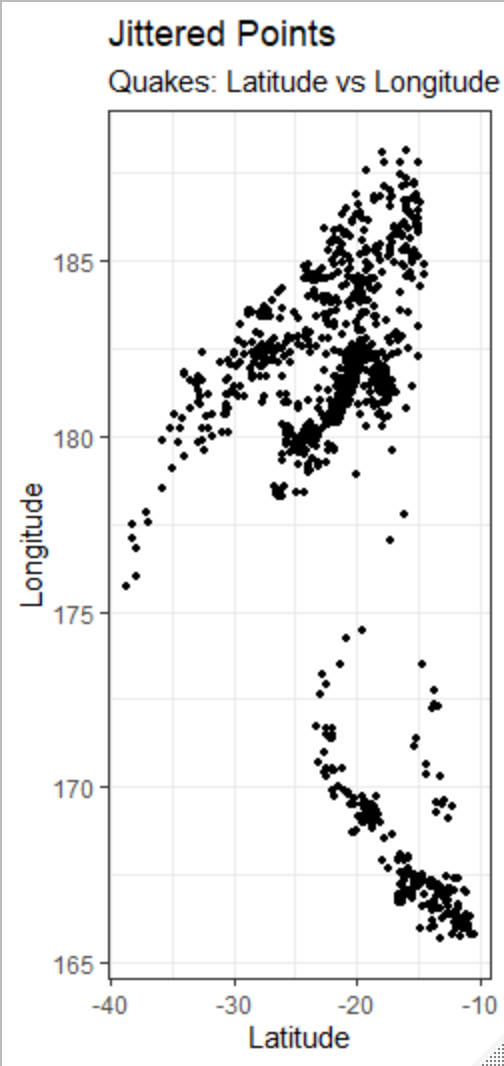


**Jitter Plot:**

#Jitter Plot

theme\_set(theme\_bw())

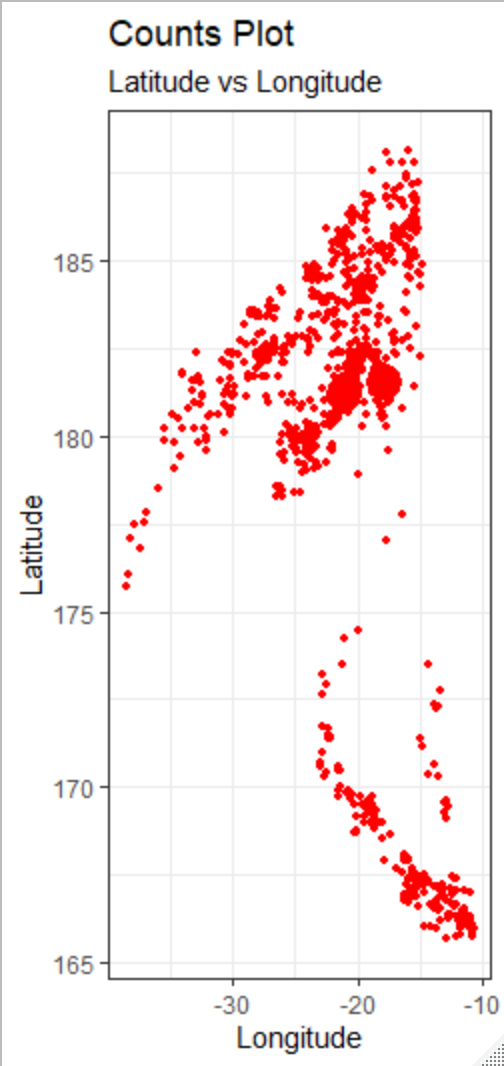
g+geom\_jitter(width=.5, size=1)+labs(subtitle = "Quakes: Latitude vs Longitude", y="Longitude", x="Latitude", title="Jittered Points")



**Counts Plot:**

#Counts Chart

g+geom\_count(col="red", show.legend = F)+labs(subtitle = "Latitude vs Longitude", y="Latitude", x="Longitude", title="Counts Plot")

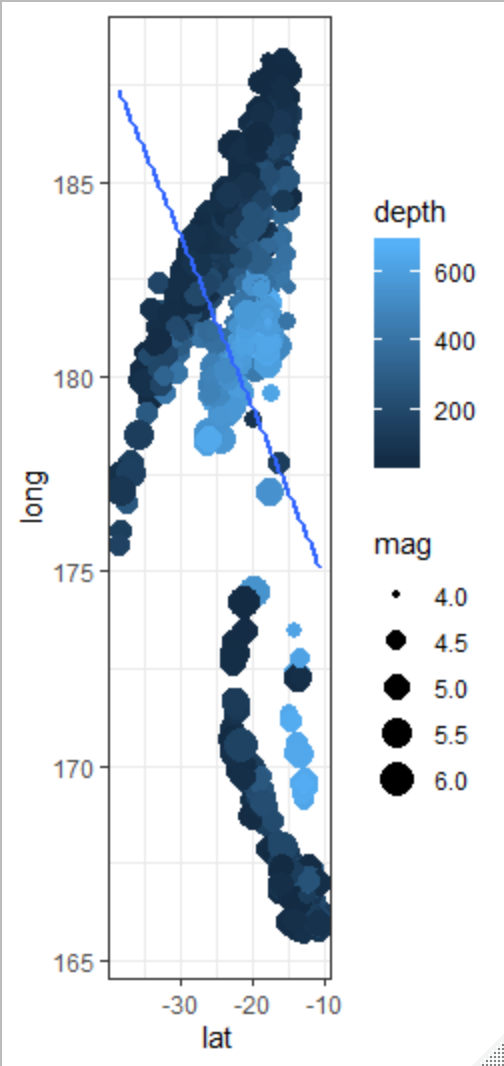


**Bubble Plot:**

#Bubble Chart

gg=ggplot(dataset\_select, aes(lat, long))+ labs(subtitle="Quakes: Latitude vs Longitude", title="Bubble Plot")

g+geom\_jitter(aes(col=depth, size=mag))+geom\_smooth(aes(col=depth), method="lm", se=F)



Since the line drawn through the point has a negative slope, this graph shows negative correlation.