

zonal_lab4

```
library(gstat)
library(sp)
data(meuse)
class(meuse)
coordinates(meuse)<- ~x+y
class(meuse)
hist(log(meuse$zinc))
shapiro.test(log(meuse$zinc))
bubble(meuse, "zinc")

#create directional semivariogram
var1<-variogram(log(zinc)~1, meuse, alpha=c(45, 135), tol.hor=22.5)
#var1<-variogram(log(zinc)~1, meuse, alpha=c(45, 135), tol.hor=45)

plot(var1, type= "l")

zonal=vgm(0.6, "Sph", 1e9, anis=c(45, 1/1e6))
vm=vgm(0.45, "Sph", 1000, add.to = zonal)
plot(var1, vm)

fit1 <- fit.variogram(var1, vm, fit.sill=F)
plot(var1, fit1)
```