

## Variogram

```
library(sp)
library(gstat)

data(meuse)

meuse$logZn <- log(meuse$zinc)

coordinates(meuse) <- c("x","y")

#calculating semivariogram

var <- variogram(logZn ~ 1, meuse)
plot(var)

#specify model with initial values
vgm1 <- vgm(0.6, "Sph",600) #without nugget
vgm2 <- vgm(0.5, "Sph",300,0.1) #with nugget

#fit semivariogram model

fit1 <- fit.variogram(var,vgm1)
fit2 <- fit.variogram(var,vgm2)

#Plot and observe the fitting
plot(var, fit1)
plot(var, fit2)

attr(fit1, "SSErr") # sum of squared errors
attr(fit2, "SSErr")

fit3 <- fit.variogram(var,vgm(1,"Exp",200,1))
attr(fit3,"SSErr")

fit4 <- fit.variogram(var,vgm(1,"Gau",800,1))
attr(fit4, "SSErr")
```