```
# nested structure

library(gstat)
library(sp)
data(jura)

data()
class(jura.val)

coordinates(jura.val) <- ~Xloc + Yloc

class(jura.val)

var <- variogram(Ni~1, jura.val)

var1 <- variogram(Ni~1, jura.val,width=0.15)

plot(var1)

vgm1 <- vgm(50, "Exp", 0.2,0)
vgm2 <- vgm(20, "Exp", 1.0, 0, add.to=vgm1)  #note add.to

var1.fit <- fit.variogram(var1,vgm2,fit.sill=FALSE)

plot(var1, var1.fit)


# geometric anisotropy

data(walker)

class(walker)

var4 <- variogram(V ~ 1, walker, alpha=76, tol.hor=45)
var5 <- variogram(V ~ 1, walker, alpha=166, tol.hor=45)

plot(var4, type="l")
plot(var5, type="l")

var <- variogram(V ~ 1, walker, alpha=c(76,166), tol.hor=45)

v.anis <- vgm(60000, "Sph", 80, 40000, anis=c(166, 0.5))  #major range is 166
degrees and the minor range is half of major range

plot(var, v.anis)

v.fit <- fit.variogram(var, v.anis)
```