STAT 400 Data Analysis Oct. 19, 2005

Today: Rest of Ch 4 : Wireframe Plots, 3D plots, Level Plots and Contour Plots of Surfaces

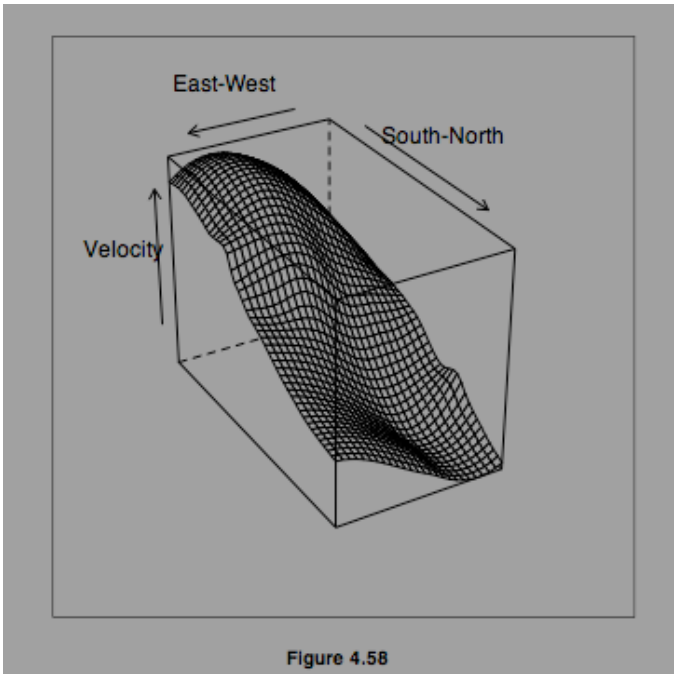

Figure 4.58

Code for the above plot is:

```
book.4.58 <-
function()
{
        attach(galaxy)
        galaxy.marginal <- list(east.west = seq(-25, 25, by = 2),
                north.south = seq(-45, 45, by = 2))
        galaxy.grid <- expand.grid(galaxy.marginal)
        galaxy.fit <- predict(loess(velocity ~ east.west * north.south,
                span = 0.25, degree = 2, normalize = F, family = "symmetric"),
                galaxy.grid)
        ar <- diff(range(galaxy.grid$north.south))/diff(range(galaxy.grid$east.west))
        ans <- wireframe(galaxy.fit ~ galaxy.grid$east.west * galaxy.grid$north.south,
                screen = list(z = 210, x = -60, y = 0),
                aspect = c(ar, 1.3),
                sub = list("Figure 4.58",cex=.8),
                xlab = "East-West",
                ylab = "South-North",
                zlab = "Velocity")
        detach()
        ans
```

}

Note: where does "ar" come from, and how are aspect ratios controlled?

a=rnorm(10)
> range(a)
[1] -1.715061 1.562248
> diff(range(a))
[1] 3.277309
aspect(r1,r2) specifies r1=yrange/xrange and r2=zrange/xrange.

Things to note pp 249-255

new data set – soil data – irregular (see p 258) - a challenge for smoothing? coverage important.

use of data gathering sequence for plots. pp 260-261

loess fit over two dimensions. standardize data before using circular smoother. details p 262.

Assignment for Oct 26:

There will be an in-class test based on the material in Ch 4 of the Cleveland text on Oct 26.

KLW