Homework 5. Due Wednesday March 9.

1. Simulate the simple ARCH model:

$$y_t = \mu + \sigma_t u_t \,,$$

where

$$\sigma_t^2 = \omega + \beta \sigma_{t-1}^2 + \alpha u_{t-1}^2 \,,$$

and estimate the model by ML. (u_t is iid Normal(1,1).)

2. Estimate the same data by GMM, but assuming that the data were generated by a stochastic volatility model. (You can you use the program from Econometrics II and some of the moments written down in my paper in *Journal of Econometrics* 1999.) For this mis-specified model, do you get a reasonable estimate of the persistence in the true model? The purpose of this question is to practice GMM.