Homework 3
Ma641 Time Series I
due by class time 6:15pm, Monday June 16, 2008

Please try to submit a hardcopy of the report in class. If you chose the elearn submission option elearn please convert the report to pdf format before submitting.

Please read the documentation in the R help system for the function *arima.sim()*. If you chose to use your own method to generate time series data with known parameters you are welcome to do so.

1. Search for 4 parameters $\phi_1, ..., \phi_4$ such that the corresponding AR(4) model is stationary. Choose your own σ_a^2 value for the variance of the gaussian white noise. Generate 365 data points. Calculate ACF and PACF for the data that you generated.

2. Repeat the above for another model AR(5) using once again parameters of your choice.

3. Write a paragraph detailing the differences between the two graphs and what is the recommended order of the corresponding models based on the data.

4. Using a method of your choice and the recommended order from the previous point estimate the parameters present in the model. Benchmark the estimates with respect to the known parameter values. Pay attention to the form of the model used (standard or alternate form).

Comment: In class I also assigned an MA model. Since we did not cover MA models yet I decided to skip that part from this assignment. However, you will have to do that part for the next assignment.