FORECASTING TIME SERIES

Homework 1

(prepared by Lorenzo Pascual)

Respond by groups to the following questions in a very concise and clear way. Send your answers in a "Word file" to lpascual@faculty.ie.edu until midnight on Saturday, February 3 (no more than one single page per time series)

For the seven time series data available in file Homework_1_DATA.csv, please respond to the following questions:

1. Plot the series, its correlogram and its histogram.
2. Using the information in the previous plots, discuss whether:
   a. The series is stationary
   b. The series has a marginal Normal distribution
   c. The series is white noise, strict white noise or Gaussian white noise
   d. The dynamic dependence of the series can be represented by a linear model
   e. There are potential non-linear dependences
3. For the non-stationary time series, justify the proper transformation to stationarity, and respond the same questions in 2 for the transformed stationary data.
4. Finally, justify again your previous answers using basic statistics and formal tests when available.