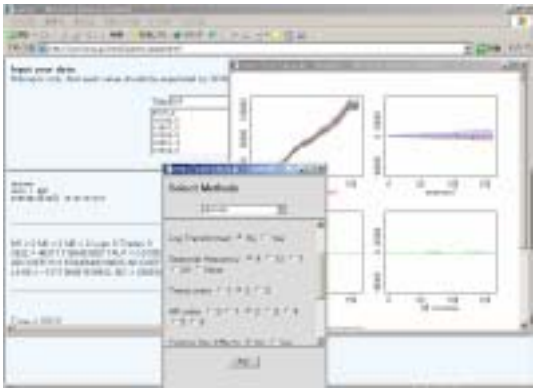
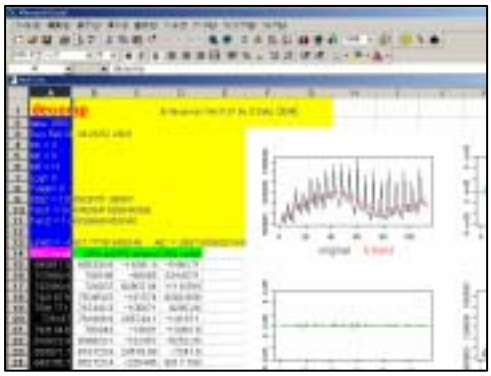
Web Decomp and E-Decomp – Time Series Analysis using R

Seisho Sato (The Institute of Statistical Mathematics, sato@ism.ac.jp)

In this paper, we introduce “Web Decomp” and “E-Decomp”. Both software are based on “R” or “S” and the core system is same. We developed first “Web decomp” which is web application using S or R. Then we developed E-Decomp which is Excel version of “Web Decomp”. It was easy to re-make the application because R has good abilities in their extension and portability. The both software are shown in my web site “http://www.ism.ac.jp/~sato/”. In Web Decomp and E-Decomp, users can easily apply various time series methods, for example, trend estimation, seasonal adjustment, AR fitting, ARMA fitting and so on.





Web Decomp and E-Decomp

The list of main methods is shown as followings. We note that all method are applied for univariate series.

a. Decomp --- The seasonal adjustment method by using a state space modeling which was developed by Kitagawa and Gersch(1984) , “A smoothness priors --- state space modeling of time series with trend and seasonality, *JASA*, **79**,386,378-389.

b. ARfit --- AR fitting by minimum AIC method

c. ARMAfit --- ARMA fitting. User needs to select an ARMA orders.

d. AutoCor --- Plot autocorrelations of the data.

e. Spectrum --- Plot power spectrum calculated from autocovariances of the data.

The program consists of a GUI part and a computational part. The GUI part is written by JAVA Script(for Web Decomp) or EXCEL-VBA(for E-Decomp). And the computational part is by R(or S) and the DLL which is called from R(or S). These two parts are linked by using CGI program(for Web Decomp) or “R-(D)COM Interface” (for E-Decomp) which was developed by Mr. Thomas Baier.