

Step 1: Double click on Call_CoSMoS.m and run it to open the GUI.

Step 2: In the GUI select the probability distribution and autocorrelation structure from the drop-down lists

Step 3: Enter the parameters of selected distribution and autocorrelation structure

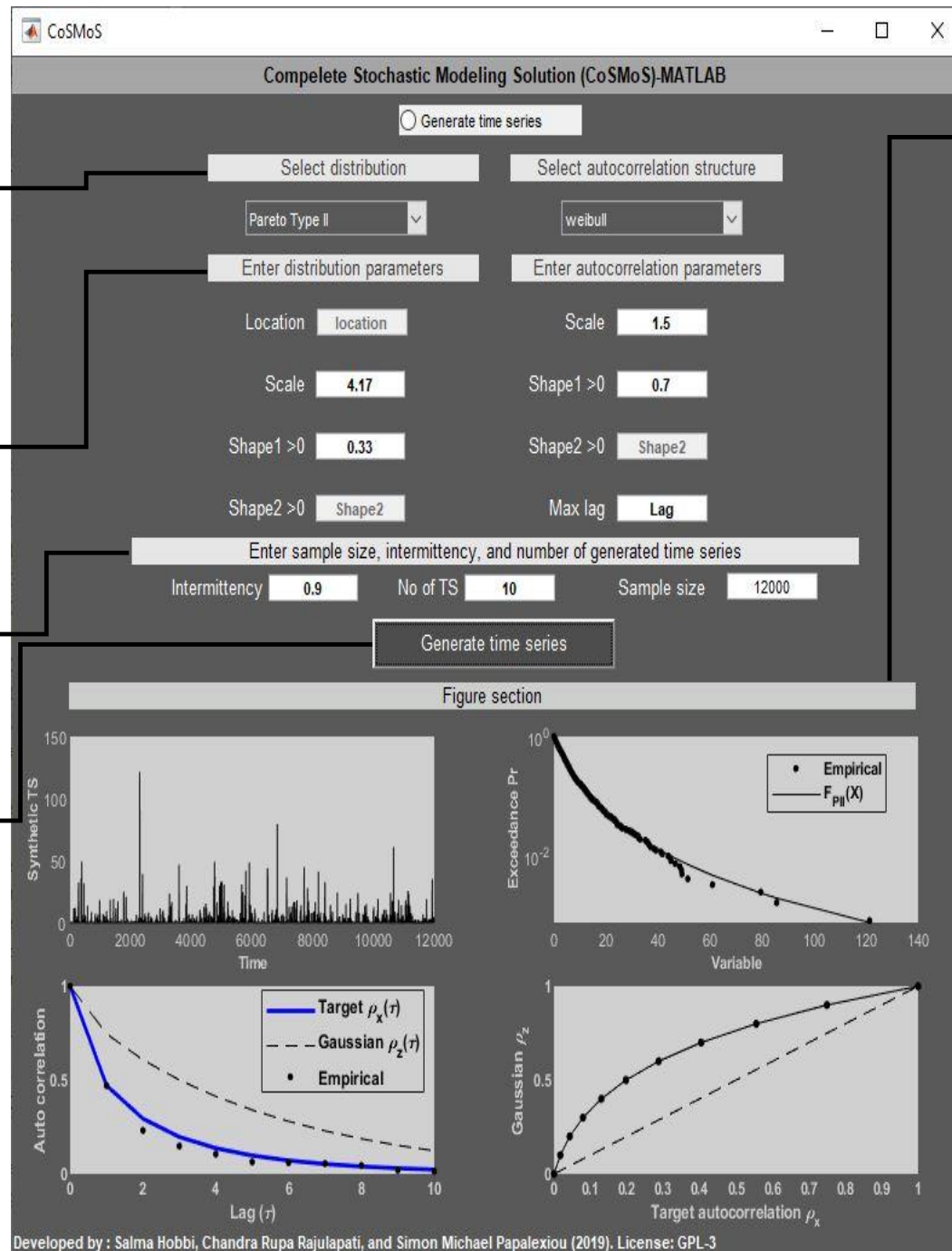
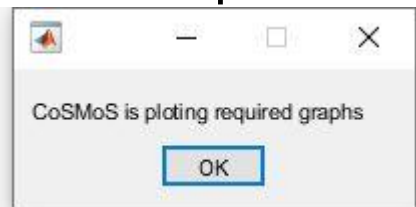
Based on number of parameters for each distribution user has access to related textbox.
Example: Pareto type II has two parameters (scale and shape) so Location and Shape2 text boxes are not available (see section 1).

Based on number of parameters for each autocorrelation structures user has access to related textbox.
Example: Weibull ACS has two parameters (scale and shape) so Shape2 text box is not available.

Step 4: Enter the intermittency value (as probability zero), sample size (time series length), and number of time series you wish to generate

Step 5: Click the “Generate time series” button

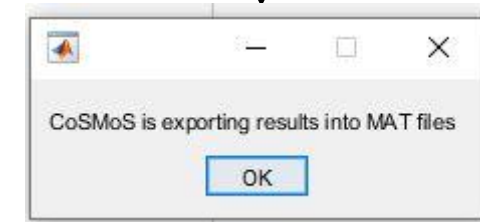
A dialogue box pops up when CoSMoS starts to plot the figures



Result 1: The GUI offers four plots:

1. the generated time series,
 2. the target distribution compared to the empirical,
 3. the target autocorrelation structure compared to the empirical, and
 4. the correlation transformation function.
- If more than one time series are generated the GUI shows results for the first one.

After plotting, a dialogue box pops up when CoSMoS starts to save the data in .mat format



Result 2: ‘Results’ folder is stored in the directory where CoSMoS.m is saved. The generated .mat files in the folder store data to create the four plots for any of the time series. Particularly, five files are created:

- a. SimulationInfo.mat – summary of the simulation parameters.
- b. GeneratedTS.mat – values of the generated time series.
- c. Distribution.mat – data to create the exceedance probability plot.
- d. ACS.mat – data to create autocorrelation plot.
- e. ACTF.mat – data to visualize the autocorrelation transformation function

Use Visualize.m to create the plots shown in GUI for any of the time series and perform any additional analysis in MATLAB