Requirements for macro
The macro reads only Microsoft Excel files (MS Office 2003) with these requirements. For an example file, download the sample Excel file from our website.

1. Data in Excel file should be stored column-wise.
2. Each column has a one-row, one-word description (name of the data/group).
3. Column A has increments in total number of data points to be analyzed (1, 2, 3, …). In our case, one data point was data for a one-hour block collected by the AccuScan monitoring system.
4. Column B is derived from column A using the formula: **A2*(1/12), A3*(1/12), A4*(1/12)** etc. The number "12," in our case, represents 12 nocturnal hours taken for analysis. *For example, if data were collected in 30-minute blocks, then column A would have twice as many data points, so the formula in column B would need adjustment: **A2*(1/24)**, etc. Likewise, if data were collected in two-hour blocks, the formula would be **A2*(1/6**, etc.*
5. Data start at column C.
6. The last column, in our case, is the baseline column. It contains zeroes everywhere and the number "1" only at the position where the treatment is applied. This is only to help with the graphical representation.
7. All columns must be the same length.
8. For practice, you can use the Microsoft Excel file (available on our website), which contains real data from our laboratory.

Instructions for use
1. Set up program directory and data directory according to their location. Currently, the program is expected in user's home under "/Mathematica/sasha" (user's name) and the data in "Mathematica/sasha/xls". Change the user name accordingly.
2. Place the mouse cursor on the first cell below and execute the cell with SHIFT/ENTER. Program will open a new window with a list of all Excel files in the specified folder. Enter the index number of the desired Excel file (not the name of the file).
3. After you select the desired Excel file, go to the next cell and press SHIFT/ENTER again. You will be asked for value of GB. Enter 0 if you wish to plot raw data or >0 if you want various degrees of Gaussian filtering. Press ENTER. For the same data set you will get three graphs:

   - Raw data if GB=0, or filtered data when GB>0
   - Polynomial-fitted data
   - Binned data

4. In orange commented text, you can see more specific instructions about parameter.
5. When satisfied with the graph(s), use a right click to save it in EPS format and edit it in Adobe Illustrator or Corel Draw. You may also choose other available file formats.

NOTE: If animal groups are very heterogeneous in their activity, there is an option to standardize data using statistical Z-scores method. In our macro, this is available for Gaussian filtering and polynomial fitting. In each subsection, if you want to switch between plotting raw data or after Z-standardization, change parameter z=0 or z=1.