Content to select from for Section 5 – User.

User functions

To allow the user to add other data sets, models or statistical routines, without disrupting the underlying model structure, selected functions have been made external to the class definitions. Copies of the sample files can be found in the ..\muitoolbox\muitemplates folder. For User Data and User Model these can be copied to a working folder and renamed to suit the application. For User Statistics and User Plots the files in the templates folder can be used to replace the version in the ..\muitoolbox\psfunctions folder. The user\_plots and user\_stats functions are called from the respective UIs, hence the names should not be changed (unless the code in calling class is also edited).

User Data

This option allows the user to easily load data that is different to the formats provided. The class is muiUserDataand the class file handles the loading and amending of records but requires the file format and meta-data for the variables being loaded to be defined. The file dataimport\_format\_template.m, in the ..\muitoolbox\muitemplates folder, provides an example of the code needed to load a bespoke file format. This is called from *Setup> Import data> User Data* and loads the date into the generic muitoolbox muiUserData class. The key functions that need to be edited in the file are *getData* and s*etDSproperties*. The *getData* function defines how to read the data and assign it to a single dstable or a named struct array of dstables, where each field name provides a reference to the dataset in the table. The *setDSproperties* function defines the metadata needed to describe the variable and any associated dimensions. Examples of the code to load a range of different formats can be found in the ...\muiAppCoastalClasses\FormatFiles folder.

User Models

The User Model option (*Run>User Model* - see Section 3.5.7) calls the user\_model function in the muitoolbox. The user is prompted to define the classname and the function call to run the model (default is runModel). This the calls the chosen model and adds any results to the App database (depending on the actions defined in the user model class). The file Model\_template.m, in the ..\muitoolbox\muitemplates folder, provides a template for creating a model class. Any existing model classes can also be called using this method.

User Statistics

On the General and Timeseries tabs of the Statistics UI there is a Statistic list dialogue box. The User option in this list calls the user\_stats.m function, which can be found in the ..\muitoolbox\psfunctions folder. This allows the user to define their own workflow, accessing data and functions already provided by the XXX App. The sample code illustrates the workflow for timeseries data to produce a clusters plot. If called from the General statistics tab the code simply returns a warning message. The code could be added to provide some alternative function when called from the General stats.

User Plots

On the Plots UI there is a Plot type list dialogue box. Select User and assign the required variables to the buttons for the selected tab. This passes the variables selected to the user\_plot.m function, which can be found in the ..\muitoolbox\psfunctions folder. This allows the user to set up their own plotting function. The demonstration function provided plots a line or surface plot depending on whether a variable has been assigned to the z-dimension.