Spectral HRM Toolkit Manual

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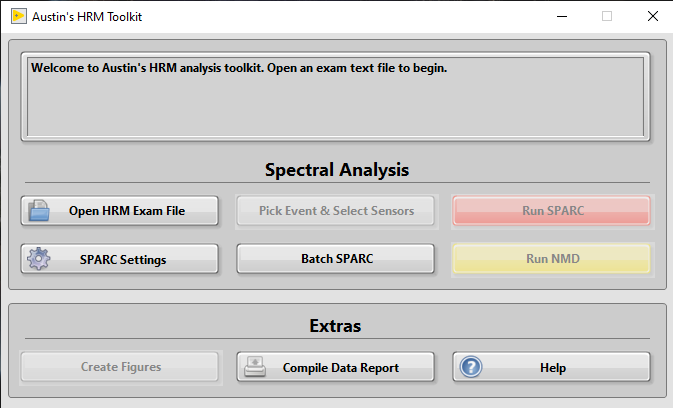
[Event and Sensor Selector 3](#_Toc51071738)

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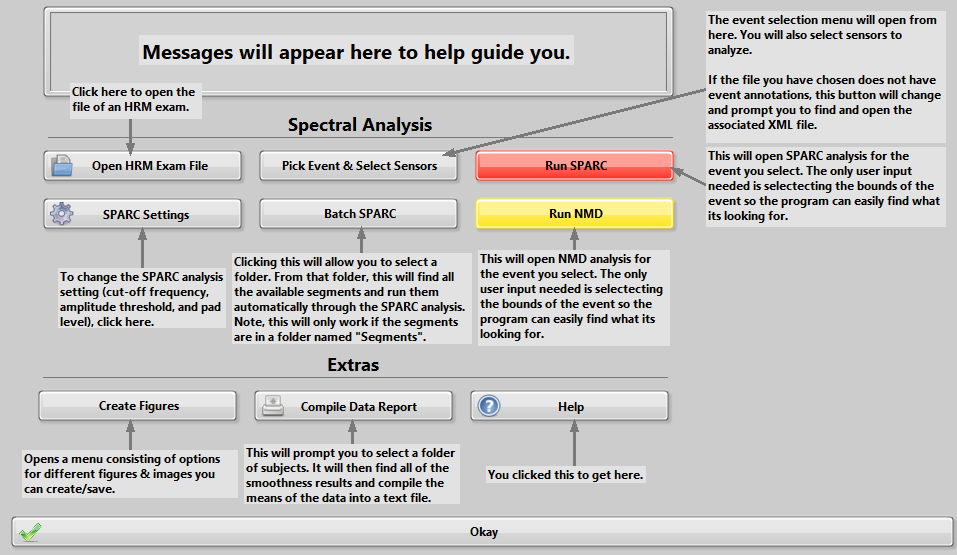
[Create Figures 3](#_Toc51071740)

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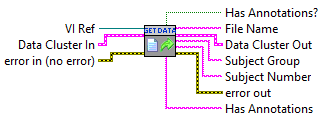
# Main Menu

The main menu, shown on the right, is the first window shown to the user. Below is a short description of the function of each button.

Following sections will go into more detail of the SubVIs that are called from the main menu. In the second half of this document, there is a description of the code (Block Diagram).

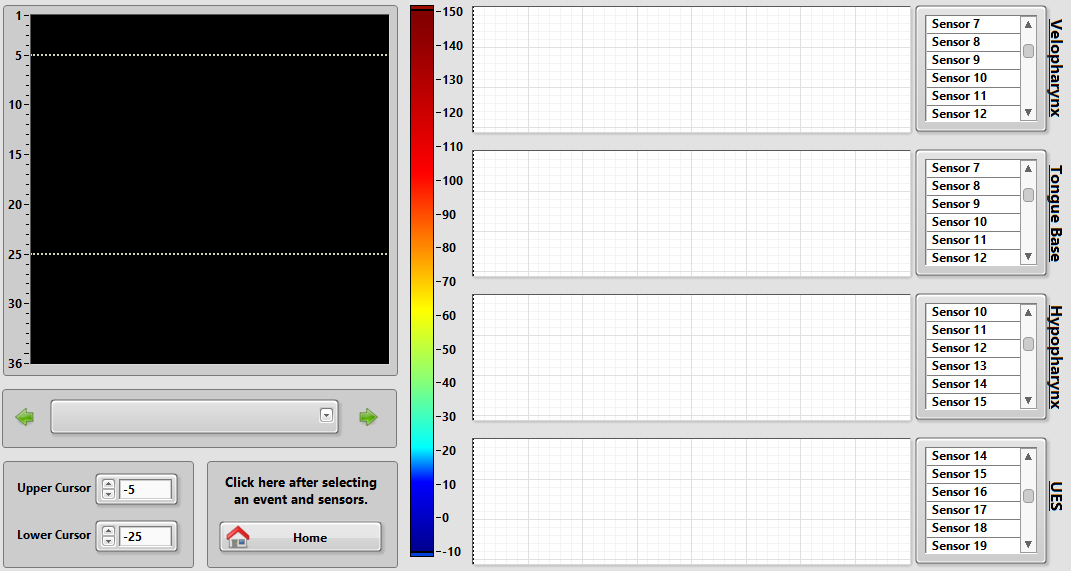
* Open HRM Exam File
  + Prompts the user to select an examination file for analysis.
  + This will only accept Text files.
  + Once selected, the program checks if the file has events annotated.
    - Annotation status is added to the main menu message box.
* Pick Event & Select Sensor/Add Annotations
  + If the selected file has annotations, the Pick Event & Select Sensors button will be available.
    - Clicking this will open a new menu that will be described later.
  + If there are no annotations, the Add Annotations button will appear.
    - Clicking this will prompt the user to open the XML file that corresponds to the selected exam file. The annotations will then be added from the XML file to the exam text file.
* Run SPARC
  + This will only become active if sensors have been selected in the Pick Event & Select Sensors SubVI.
  + Spectral Arc Length analysis will be carried out on the selected sensors.
* SPARC Settings
  + Opens a menu to allow users to change the SPARC analysis settings (Cut-off frequency, amplitude threshold, and pad level).
* Batch SPARC
  + Will run SPARC analysis on a folder of exam segments. The segments are created for each event that is analyzed during the regular analysis.
* Run NMD
  + Similar to Run SPARC, this will only be active after an event and sensors are selected. Runs Normalized Mean Deviation analysis.
* Create Figures
  + Opens a menu allowing the user to select different figures to create.
* Compile Data Reports
  + Prompts the user to select a folder and compiles the SPARC data from all the smoothness analysis files in that folder.
* Help
  + Opens up this window that describes what each button does.

## Open HRM Exam File

This event opens up a SubVI called “Get Data from File”. The SubVI will prompt the user with a file dialog window that allows them to select a text file. Inputs and outputs of the SubVI are shown on the left.

The SubVI extracts the spatio-temporal data from the selected text file and adds it to the data cluster. Other outputs are the subject group name (name of the folder that holds the subject folder) and subject number (name of the subject folder, usually a three digit number). It also checks if the file has event annotations. All of this information is presented to the user on the main menu.

## Pick Event & Select Sensor

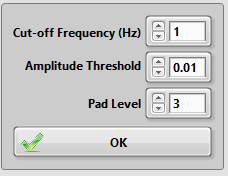
This button will only be available if an HRM exam file has been loaded and it has annotations.

When pressed, the “Event & Sensor Selector” SubVI is opened. From here, the user can select which event they would like to analyze from the dropdown menu and, on the right, assign sensors to each region.

Users can also use the green arrows to shift the view of the event forward and backward one second. The upper/lower cursor controls allow the user to move the white lines on the spatiotemporal plot. Right clicking on the plot gives to option to change the Z axis.

## Run SPARC

## SPARC Settings



## Batch SPARC

## Run NMD

## Create Figures

## Compile Data Report

## Help

# Event and Sensor Selector

# Run SPARC

# Create Figures

# Batch SPARC