

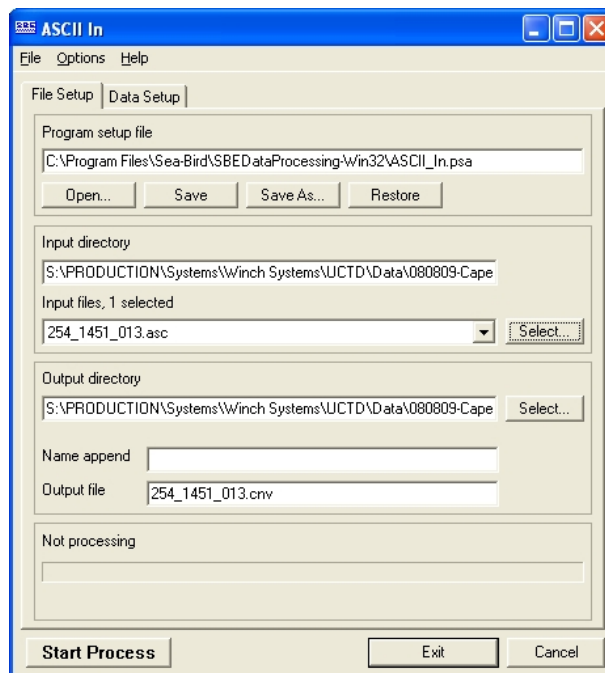
UCTD Sound Speed

This guide provides instructions on how to derive sound speed profiles from UCTD data using Sea-Bird's SBE Data Processing software.

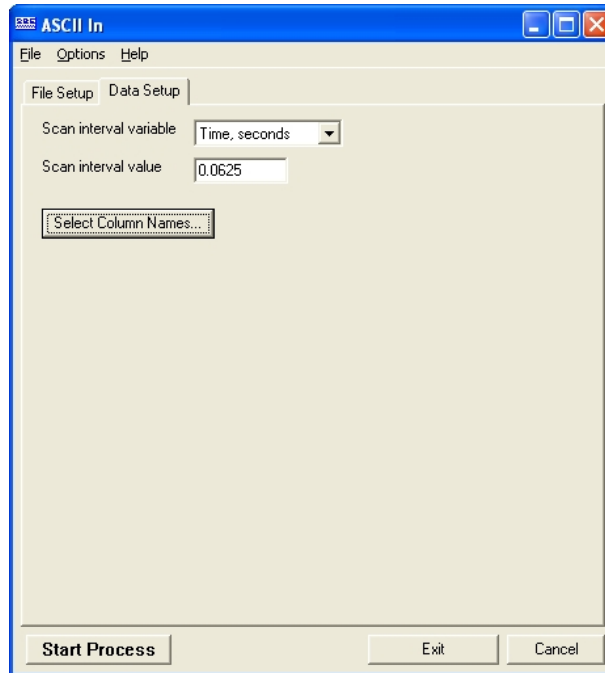
1. Importing UCTD data

First, the UCTD data needs to be imported into the software. After starting the application, choose the **ASCII In...** menu item on the **Run** tab and follow

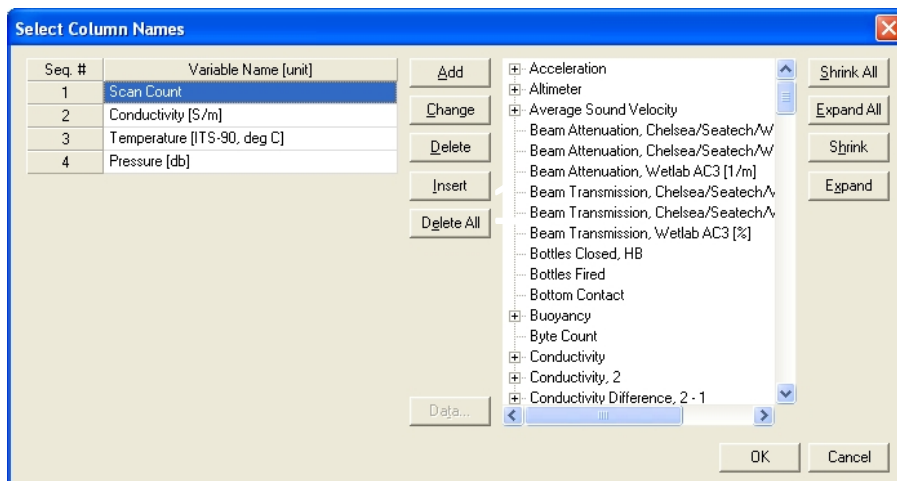
Step 1 In the **File Setup** tab, enter the input directory where the data are located and select the data file.



Step 2 Choose the **Data Setup** tab and enter the **scan interval variable** and **scan interval value** as shown below. The click on **Select Column Names...**



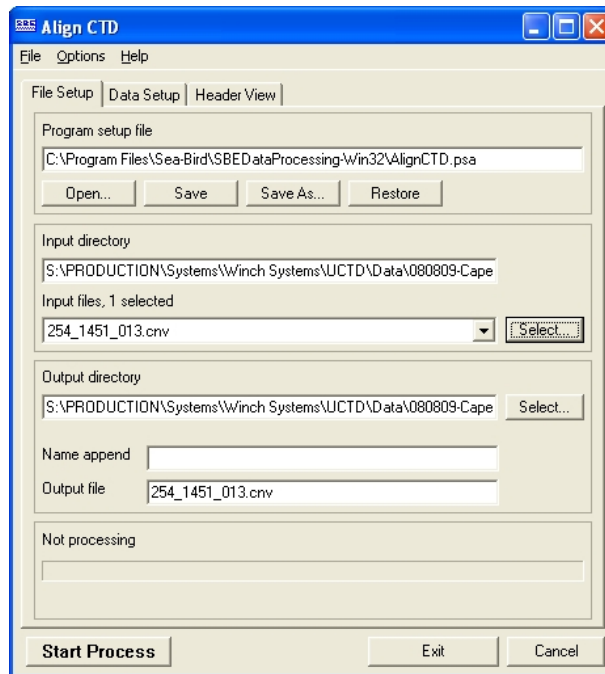
Step 3 Add the **Variable Names** as shown below, click **OK**, and then **Start Process**. This will produce an output file with a .cnv extension which is used for further processing.



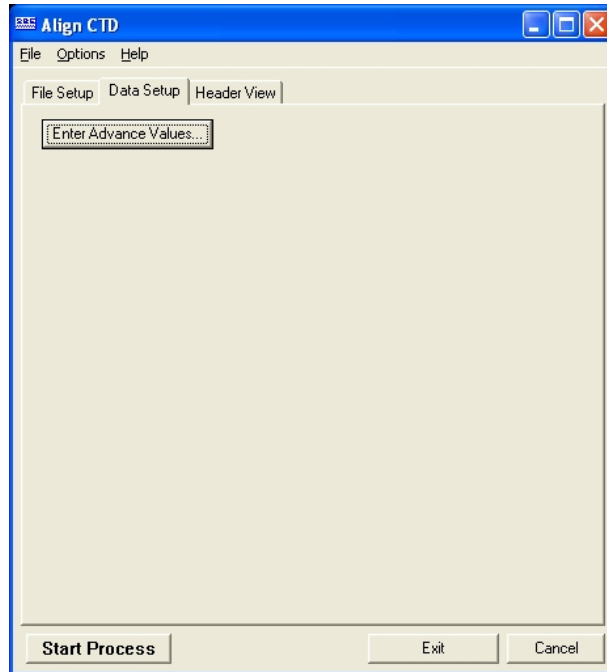
2. Aligning CT data

The different response times of the conductivity and temperature sensors lead to salinity spiking in the data. In order to minimize this artifact when deriving salinity, the data from the two sensors must be aligned temporally. This is accomplished simply by shifting the temperature data with regard to the conductivity data in time as shown in the step below.

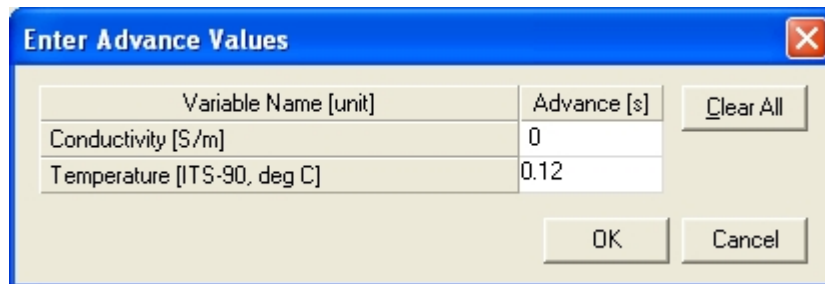
Step 1 Choose the **Align CTD...** command in the **Run** menu and select the file produced in the previous section. Choose a different **output file name** or enter a token in the **Name append** section unless you want to overwrite this file.



Step 2 Click on **Enter Advance Values...** in the **Data Setup** tab.



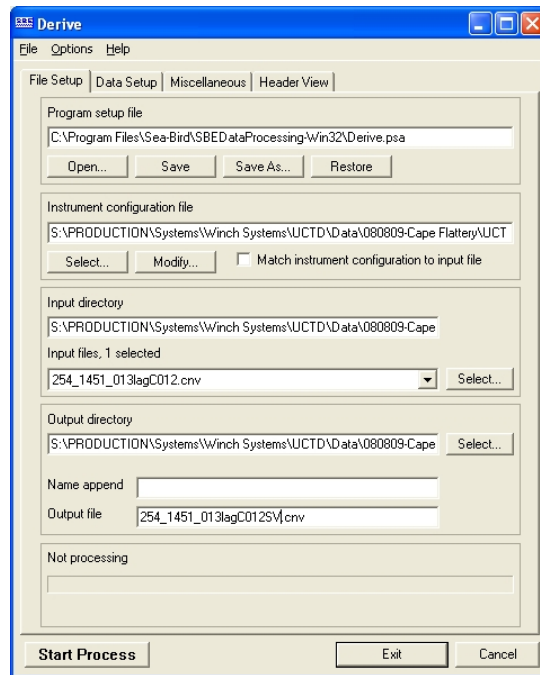
Step 3 Enter the values shown below for **conductivity** and **temperature**. Click **OK** and **Start Process**. The output file created will the temperature values advanced in time by 0.12 s with regard to the conductivity values.



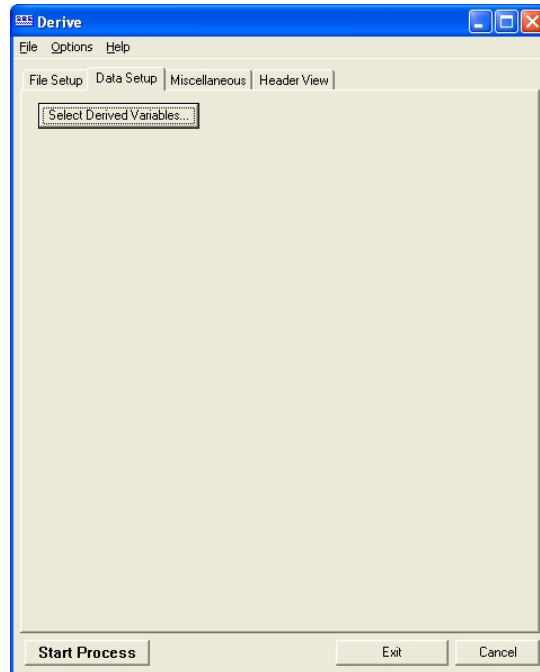
3. Calculating Sound Speed

The calculation of sound speed according to **Wilson's equation** is described below.

Step 1 Choose the **Derive...** command in the **Run** menu and select the file CT aligned produced in the previous section. Choose a different **output file name** or enter a token in the **Name append** in the **File Setup** tab unless you want to overwrite this file.



Step 2 Click on **Select Derived Variables...** in the **Data Setup** tab.



Step 3 Add the **Variable Names** as shown below, click **OK**, and then **Start Process**. This will produce an ASCII output file with depth listed in first and sound velocity listed in the second column.

