



## 8 COMPASS BIAS ESTIMATE



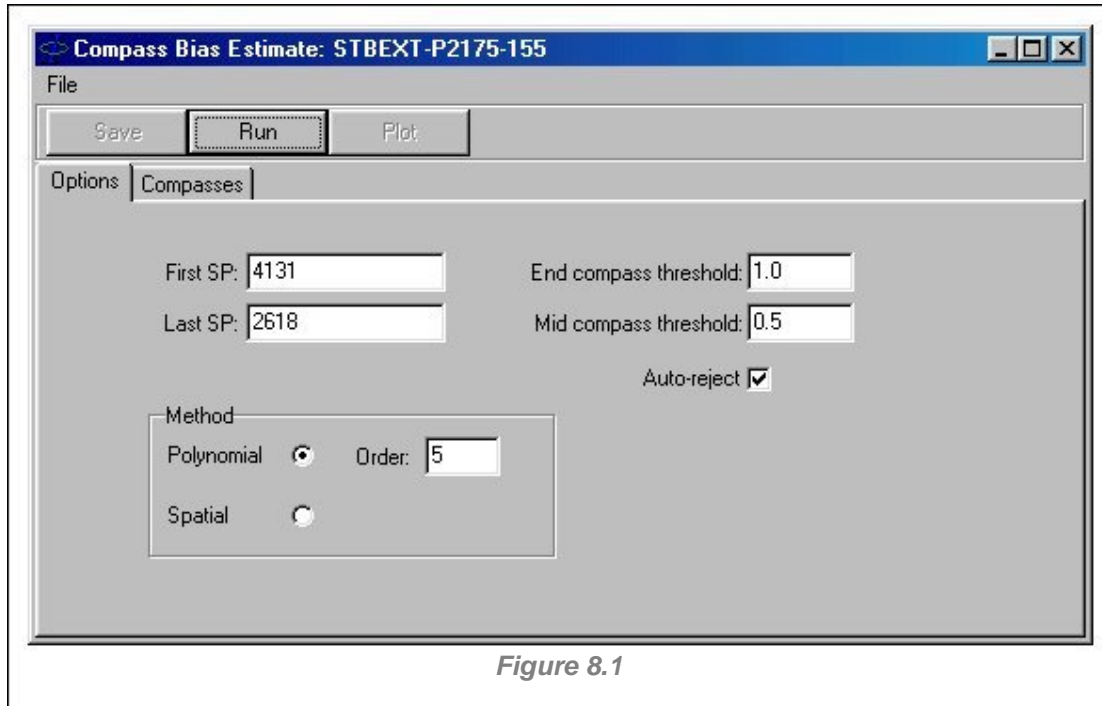
Streamer compass bias estimates can only be computed after the line has been preconditioned because only compass data deskewed to the shot event is used.

From the main menu select *Execute | Compass Bias Estimate* and select the line from the line list.

This module is used in Automatic Processing. Before Automatic Processing can take place the parameters for this module must be saved by selecting *File | Save Parameters* from the menu. The parameters in effect at the time will be saved and used for subsequent processing until changed and saved.



## 8.1 Options

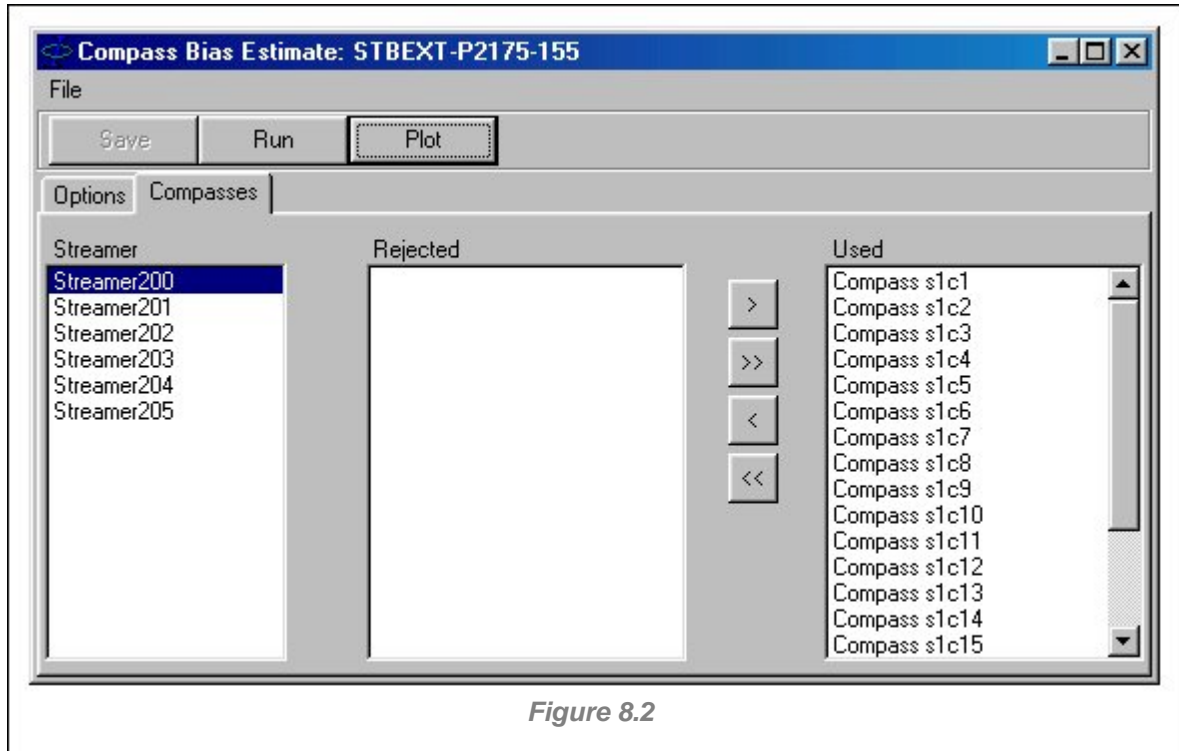


Referring to Figure 8.1, the options available are:

- First/Last SP:* The shotpoint range for which biases are to be computed. The default range is the first and last good shotpoint for the line shown in the project.
- End compass threshold:* The threshold for which the first and last compasses on a streamer whose absolute value of the computed bias exceed will be highlighted in the report with an asterisk. The default value is 1.0 degree.
- Mid compass threshold:* The threshold for which any except the first and last compasses on a streamer whose absolute value of the computed bias exceed will be highlighted in the report with an asterisk. The default value is 0.5 degrees.
- Auto-reject:* Compasses for which the mean computed bias exceeds the specified threshold will be automatically flagged as rejected for the network adjustment.
- Polynomial:* Compute biases by fitting the streamer to a best fit polynomial of the specified order.
- Order:* The order of polynomial to be used for the polynomial method. The default value is 5.
- Spatial:* Compute biases based on the assumption that all compasses on a streamer should have the same value at any one geographical location.
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## 8.2 Compasses



Referring to Figure 8.2, the compasses used in the bias computation for each streamer are all those which have not been manually rejected. Compasses can be rejected or accepted by inclusion in the *Rejected* or *Use* lists respectively. If any changes are made the *Save* button is enabled. Clicking on the *Save* button will save the Use/Reject status of each compass as will apply in the network adjustment.

After setting the options as required click on the *Run* button. The computation runs in the foreground and should not take more than a few seconds depending on the amount of data and CPU speed. On completion the report is saved to text file in the database and displayed. For each compass the number of observations, mean bias, maximum bias, minimum bias, standard deviation of biases and delta standard deviation is given.

Delta standard deviation (DSD) is the standard deviation of the differences between consecutive readings for a compass, taken from the processed data.

A excerpt from a sample report is given below. In this example Compass S1C5 has been flagged as exceeding the specified bias threshold.

Strmr	Compass Name	N_Obs	Mean	Min	Max	SD	DSD
Line:	STBEXT-P2175-155						
Method:	Polynomial order 5						
Shot range:	4131 to 2618						



1	1	s01c01	9606	1514	0.31	-0.01	0.79	0.02	0.006
1	2	s01c02	11468	1514	-0.13	-0.34	0.04	0.00	0.004
1	3	s01c03	17397	1514	-0.10	-0.47	0.26	0.02	0.002
1	4	s01c04	12637	1514	-0.21	-0.49	0.25	0.02	0.002
1	5	s01c05	12959	1514	1.03	-0.42	0.42	0.02	0.021 *
1	6	s01c06	20480	1514	-0.02	-0.32	0.24	0.01	0.001

Click on the *Plot* button to display time series plots of the computed compass biases.



### **8.3 Time Series Plots**

After the bias estimate has been run it is possible to view time series plots of the biases by clicking the *Plot* button. Refer to [Section 15. Multiplot](#) for details of the plotting functions.

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