**SIFT changes in version 1.2**

In the input sheet, source group names can now be used instead of numbers; these names are used in the software.

The sliders on the setup page have been moved to the tabs for which they apply and manipulating them will change things in real time so that their effects can be seen.

The software will automatically recommend decisions during all stages of the fingerprinting methodology and check the appropriate options: e.g., during source group classification, which models to run and which models to weight. As a result, if desired, no user input other than moving to the next tab is required.

On the bi-plots tab, it is now possible to view a high resolution bi-plot of any two tracers for each source group classification.

Separate tracer variability ratio and range test thresholds can now be used for each source group classification.

Correlations between each tracer and the largest two discriminant functions of each composite fingerprint are presented on the “Compare Sources and Sediments” tab. This is used to drive the recommended weightings in the un-mixing model.

A Shapiro-Wilks test for normality is presented for each tracer and source group classification in the “Compare Sources and Sediments” tab.

Virtual mixtures are now run for three un-mixing model structures: one which generates the Monte Carlo random numbers using the original sample-based distribution; one which uses a transformed multivariate normal distribution, and; one which uses a distribution between the measured 25th and 75th percentile values for each tracer and source group. The user can select which model performs best and use that to apportion the composition of the sediment samples.

In the “Virtual Mixtures” tab, there is the option to exclude results of any Monte Carlo iterations which have a goodness-of-fit below a user-specified threshold. Plots are provided showing the impact of this threshold on model accuracy and the proportion of iterations passing the threshold.

A “Sensitivity Analysis” tab has been added where virtual mixtures are formed using only subsets of the overall source sample dataset. These are unmixed to identify the potential uncertainties associated with localised sediment delivery from only part of the catchment in question.

Multiple potential sources of crashes with specific dataset configurations have now been corrected.