

Release Notes for Streams 2.06

January 2017 – Roger Nokes

1. Java Upgrade

Before being able to run Streams 2.06 the java needs to be updated to 1.8. You should install the Java Development Kit (JDK) version 1.8 (or 8 as different numbering systems are used). The latest version can be downloaded from the Oracle website at

<http://www.oracle.com/technetwork/java/javase/downloads/index-jsp-138363.html>

2. Enhancements

Streams 2.06 includes a number of enhancements together with some changes. The majority of the enhancements are associated with the field views to provide the user with more control over their appearance and to provide more powerful and consistent ways of managing entities associated with the views such as curve fits, edge detection and so on.

There is one significant new addition to Streams. This is the support of the application of PTV to structural mechanics. Displacement fields and associated strain fields are now included. These features are relatively immature but do provide enough functionality for the user to be able to analyse particle or dot fields on structural elements or material surfaces in general, and generate strain fields from their motion.

Significant testing has been undertaken but no doubt some bugs remain so any feedback on new bugs identified would be much appreciated.

1. Displacement time series can now be computed from particle records. A range of field calculators have been implemented, primarily associated with displacement and strain. Please see the other manuals for more detail.
2. All graphical field views (and the particle record particle view) now provide the user with enhanced control over the view's appearance and a slightly different method for changing view settings. Settings that are likely to be applied to a single view are retained in the view's View menu. However settings that are more likely to be applied to all views of the same type (i.e. all 1D scalar field graph views) are now accessible in a dialog box. This includes such things as colour choices as well as settings that before were only available for the export of the view to a file – for example border sizes, line width and font size. When a view is now exported to a file the settings for the screen view are used in the exported image.
3. All 2D field views now allow the user to change the x and y ranges used in the view. In previous versions these were fixed based on the data being plotted.
4. Curve fitting, for views that provide it, is now managed via a separate curve fitting manager window. Multiple curve fits can be created and different ones selected for viewing. This is consistent across all views that support curve fitting.
5. Particle seeder management, for views that support seeding of particles, is now

managed in a consistent way via the seeder management window.

6. When 1D scalar fields are overlaid on another 1D scalar field a legend is now available if desired. The names used in the legend are editable.
7. It is now possible to edit particle records, by deleting frames, while retaining particle matches. For example if it is decided once particle tracking has been completed that the time step between frames is unnecessarily short then only every second or third frame, for example, could be retained and the particle tracks that span the retained frames will remain intact.
8. Field views with edge field detection now manage the edge fields through a manager window, in a similar way to particle seeders, curve fits and 1D scalar field overlays.
9. When a field view is resized any zoom settings are retained.
10. In numerous places where text labels are editable by the user (for example the axis labels in field views) text can be converted to greek symbols by selecting the appropriate text and using a popup menu.
11. Due to performance issues the creation of movies within a number of views has been removed. It is recommended instead that the images of the movie sequence are saved as an image sequence and external software used to create the movie – for example Quicktime 7.0 Pro on a Macintosh computer.
12. The definition of the velocity direction in constant velocity transforms has been inconsistent. In the particle record transform it corresponded to the direction moved by the camera, while for Eulerian fields it was the opposite. All definitions are the same and the velocity is positive if the “camera” is moving to the right or upwards. Previously stored transforms, when loaded from file will be updated automatically.
13. A number of other minor changes to some views.

3. Bug Fixes

Bugs have been fixed in the following areas.

1. A bug in the deletion of particles when segmentation was being used has been fixed.
2. Some file filters were not working correctly for some file types.
3. A number of bugs in vector field calculators including custom calculators have been corrected.
4. A number of bugs in field views have been fixed.
5. A bug associated with saving custom calculators has been corrected.

4. Manuals

With this release of the software the manuals have been updated and are available in PDF format with the download from the Streams website. All enhancements are documented in the manuals.