

Looking at the crinoid 3D-reconstructions with “Amira “

Download

- **Program.** Mercury offers the download of a demonstration version of “Amira 4.1” which will run at most for one month.
Link: <http://www.amiravis.com/download.html> → Evaluation.
- **Surface files.** Copy the surface files from our homepage to your PC.

Abbreviated manual

1. Start Amira program

On a Windows system, select the amira icon from the start menu.

On a Unix system, start amira by entering amira in a shell window.

The user interface is divided into four major regions.

- The *3D viewer* window displays visualization results, e.g., surfaces.
- The *Pool* will contain small icons representing data objects and modules.
- The *Properties* Area displays interface elements (ports) associated with amira objects.
- Finally, the lower left pane is shared by the *console* and amira's integrated hypertext *help* browser. Click on the *Console* or *Help* tab to select which window you want to view. The console prints system messages and lets you enter amira commands. You can use the help browser to read the user's guide online.

You can also activate the help browser by pressing F1, selecting User's Guide from the Help menu of amira's main window, or by typing help in the console window.

2. Loading data

- a Choose *open data* (green icon) and load one (or more) of the surface files.
Once it has been loaded, the data set appears as a green icon in the object pool.
- b Click on the green data icon with the left mouse button to select or activate it.
 - This causes some information about the data record to be displayed in the *properties* area.
 - To deselect the icon, click on an empty area in the *Pool* window.
 - You may also pick the icon with the left mouse button and drag it around in the *Pool*.
 - Clicking on an object typically also causes additional buttons to be displayed in the button area at the top of the Pool. These buttons are convenience buttons allowing easy one-click access to the modules most frequently used by the selected object.

3. Visualizing data

Surface objects can be visualized by attaching display modules to them.



- a Click with the left mouse button on the yellow icon called *SurfaceView*. After you release the mouse button, a new *SurfaceView* module is created and is automatically connected to the data object by a blue line. (More information and options appear in the properties area).
- b In the properties area click with the left mouse button on *Draw style* → *more options* and choose *Vertex normals*.

3.1 Making an object transparent (if required)

- Click on *Draw style* → flyout menu (standard: *shaded*) choose *transparent*.
- The degree of transparency can be changed by the *Base trans* slider.

4. Interaction with the Viewer window

The 3D viewer lets you look at the model from different positions.

- Activate the hand button (*trackball*) in the viewer toolbar. By moving the mouse inside the viewer window with the left mouse button pressed the object will be rotated. (Notice that the mouse cursor has the shape of a little hand inside the viewer window. This indicates that the viewer is in viewing mode)
- If you click on the *Translate*  or the *Zoom*  buttons, you can translate or zoom the object. (For zoom, move the mouse up and down.)
- If you click on the globe in the right bottom corner, you can rotate the object in x, y or z axis.

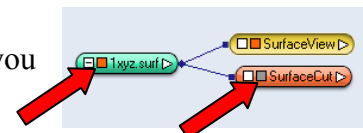
5. Cutting the object

- Click with the left mouse button on the green data icon of your object to activate it.
- Click with the left mouse button on the orange **SurfaceCut** icon above. An orange module will be connected to the data icon, an orange frame (*cutting plane*) can be seen in the *viewer* window and more options appear in the *properties* area:
- Choose the *orientation*: *xy*, *xz* or *yz*
- Rotation of the cutting plane (if required): *Options* / set the *rotate* check mark. In the Viewer window a globe can be seen in the object. Activate the arrow button (*Interact*) instead of the hand shaped mouse cursor, catch and turn the globe until the cutting plane is in the favoured position. (switch-off the *rotate* check mark).
- Applying the cut: To omit parts of the object on one side of the cutting plane and to look on the plane itself: activate the button on the right end of the *SurfaceCut* editor in the properties area.
- If the wrong part of the object is omitted, deactivate and activate the button again.
- Translation of the plane: use the slider in *Translate*.



6. Activate / deactivate Objects and modules

Each display module has a viewer toggle (orange button) by which you can switch-off (and on) the display without removing the module.



7. Removing objects

If you want to remove a module permanently, select it and choose *Pool* → *Remove object* in the main window. Choose *Pool* → *Remove All objects* to remove all modules.