

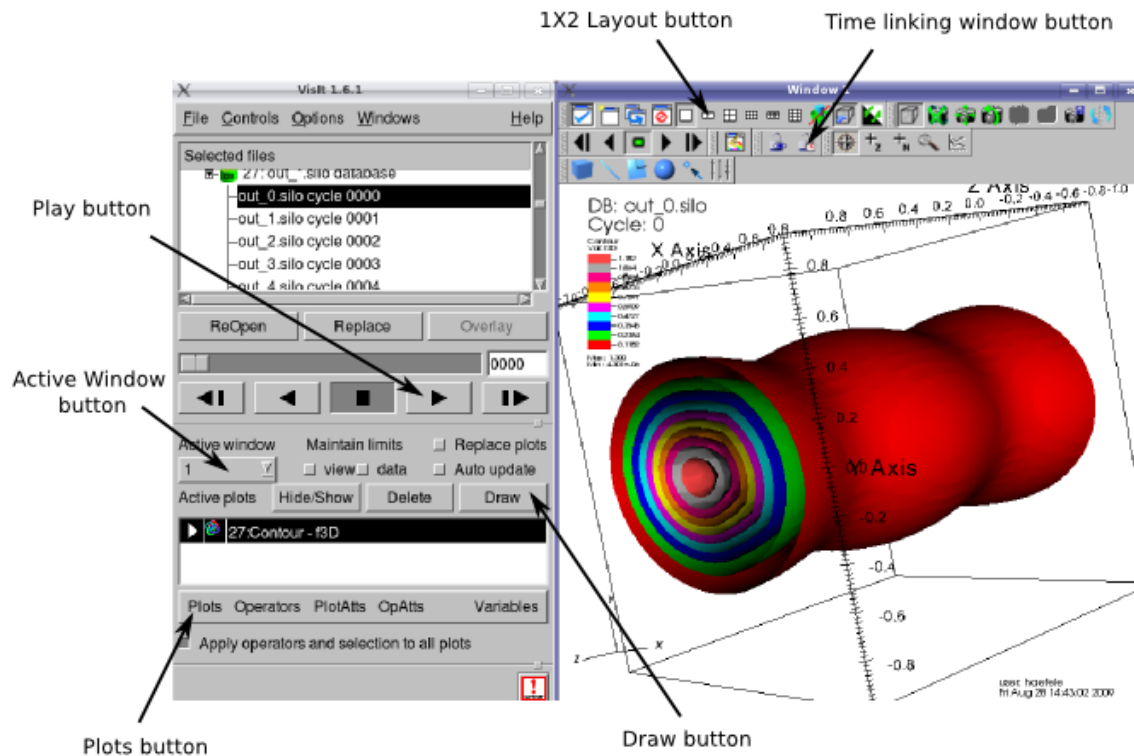
# VisIt hands on training

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## VisIt download and installation

1. Download and extract the hands on training material from the following link [https://savannah.fzk.de/gks/visit/visit\\_hands\\_on\\_starter.tgz](https://savannah.fzk.de/gks/visit/visit_hands_on_starter.tgz)
2. Depending on your OS, download the appropriate executable on the page [https://savannah.fzk.de/gks/visit/visit\\_archives/executables.html](https://savannah.fzk.de/gks/visit/visit_archives/executables.html). This page is a subset of VisIt web site<sup>1</sup>. We have done that for network bandwidth issue. VisIt executable size is several tens of MB and VisIt website has a limited bandwidth.
3. VisIt installation
  - on windows just double-click on the executable
  - on Mac OS X or Linux please refer to the install notes
4. Don't hesitate to have a look at the different tutorials and documentation available on VisIt's website <https://wci.llnl.gov/codes/visit/manuals.html>



<sup>1</sup> <https://wci.llnl.gov/codes/visit/executables.html>

## Exercise 1: iso-surfaces of a 3D scalar field

1. Launch VisIt software
2. Click *File* → *Open* and select the files `out_*.silo` present in *visit\_hands\_on\_starter.tgz* archive. VisIt will recognize this set of files as a time evolution thanks to their filenames.
3. Click on the *Plots* button, go on *Contour* and select *f3D* variable.
4. Click the *Draw* button. Normally something appears in the window 1. You can manipulate it interactively.
5. Click the ► (*play*) button to animate the picture. VisIt will open sequentially the different silo files and refresh the window 1.
6. Click *File* → *Save Window* to save a single picture.
7. Click *File* → *Save Movie* and answer the questions to save the whole time evolution. It is a good practise to save a sequence of pictures (PNG, TIFF...) and encode them as a movie in a second step (with ImageMagick for example).

## Exercise 2: Multiple windows and session mechanism

1. Launch VisIt and open the same files as exercise 1.
2. Make 2 rendering windows appear by clicking the button  $1 \times 2$  layout on the Window 1.
3. Ensure you are controlling the window 1. If not, select window 1 in the *active window*. Repeat step 3 and 4 of exercise 1 to make appear the different isosurfaces.
4. Change the active window to window 2 by clicking the *active window* button.
5. Click on the *Plots* button, go on *Curve* and select *f1D* variable.
6. Click the *Draw* button. Normally a 1D curve appears in the window 2.
7. By default, the ► (*play*) button animates only your current active window. You can link different windows with the same time slider by clicking the *Lock-time* button on both window 1 and window 2.
8. You can save all these visualization parameters in a session file, so you can retrieve them after closing VisIt. Click *File* → *Save Session* to save the session. Close VisIt and relaunch it. Then restore you parameters by clicking *File* → *Restore Session* and by selecting your file.

## Exercise 3: 2D vector field visualization

1. Plot the vector data *f2D*.
2. On the same window, plot the scalar data *f2Dx* or *f2Dy* with a pseudo-color plot.
3. Have a look at the time evolution. Modify the parameter of the color mapping, or the color won't change during the animation. To do so, double-click on the variable in the active plots list. You have to fix the minimum and maximum limit to a value and not to the minimum and maximum of the function which is the default.
4. The variable *f2D* is not like the others. It is a vector variable built from the two scalar variables *f2Dx* and *f2Dy*. You can see its definition by looking in *Control* → *Expression*. Create a new vector data with a similar expression.
5. Have a look at the source code that generates this data to see how the variable is defined.