

ADINA System Newsletter

Volume 2, Issue 4

www.adina.com

June 2000

As the summer approaches, we are very busy here at ADINA R & D preparing for the release of the ADINA System 7.4.

Many of the new features and improvements in ADINA are implemented as a result of users' requests and feedback. We truly appreciate the time and effort many of you have taken to let us know how we can make the program work better for you. We continue to welcome all your comments and suggestions.

We have discussed some of the new forthcoming capabilities in the last two newsletters. In this newsletter, we will highlight the capability of meshing multiple layers across thin sections and provide hints on the use of ADINA 7.4.

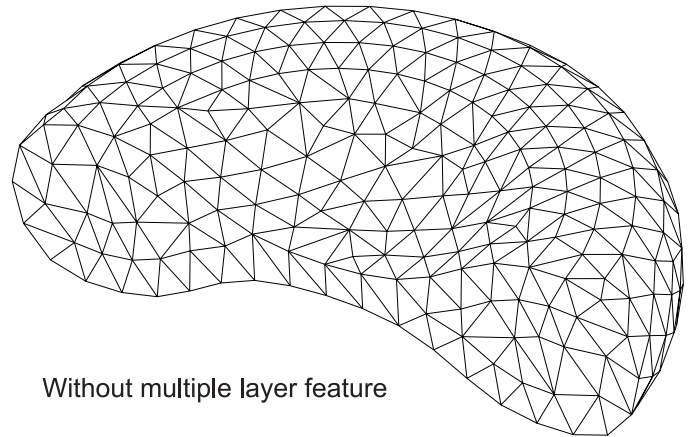
Multiple Layer Feature

In certain problems, free meshing has to be performed on geometries that include some thin sections and it is required to have more than one layer of elements across the thin sections. This is particularly so in fluid flow problems.

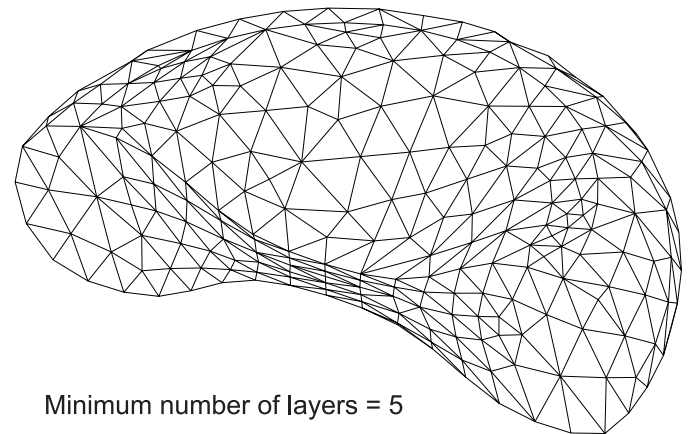
It is usually not practical to specify a very small element size for the entire geometry to achieve the multiple layer effect across the thin sections as this may result in an extremely fine mesh that cannot be solved, or the mesher failing to create the mesh.

The new multiple layer feature in ADINA 7.4 allows the user to select certain pairs of opposing faces across thin sections and specify the number of element layers for that pair of faces. The user can also simply specify a minimum number of layers for the entire geometry. This feature is illustrated in Figure 1.

This new feature is also applicable to 2D free meshing when the Delaunay method is used. In this case, the user selects pairs of opposing edges where multiple layers are to be created.



Without multiple layer feature



Minimum number of layers = 5

Figure 1: Multiple Layers across Thin Sections

Training Classes

The next ADINA/AUI training course will be held at ADINA R & D on July 13-14, 2000.

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More Friendly User Interface

ADINA 7.4 includes the following enhancements to the user interface.

- OpenGL support for PC Windows version.
- Option to turn label prompt on or off.
- Frame size or user-specified size can be used when creating AVI or bitmap files.
- Background color for PC Windows version can be set through the dialog box (see Figure 2).
- The dialog box for load application on PC Windows version is completely redesigned.
- [More >>] button in some dialog boxes to hide seldom-used options.
- On PC Windows version, messages are displayed to show the solution progress.
- Solution run can be suspended and resumed.

OpenGL Graphics System

OpenGL is also supported on the PC Windows version in ADINA 7.4. This will provide very significant speedup in 3D model dynamic rotation, especially with shaded or bandplot display.

The first time the ADINA User Interface (AUI) is started, the program will use the OpenGL mode if it is supported. Otherwise, Windows GDI will be used. The user can select which graphics system to use in the menu Edit > Graphics System (Figure 2). The next time the AUI is activated, it will use the last graphics system setting.

Prompt for Label

In ADINA 7.3, when the user clicks on the Add button (e.g. in the Define Line dialog box), a dialog box will appear with the new label and the user has to click OK. Most of the time, this additional step is unnecessary as the user usually accepts the default label number.

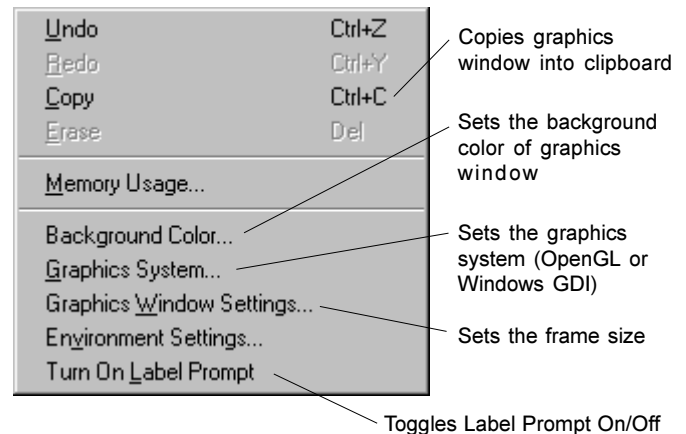


Figure 2: New Edit Menu Items

In ADINA 7.4, the program automatically inserts the next highest label without prompting the user. However, if for some reason the user wants to get the prompt for the label number, he can toggle on the option in the menu Edit > Turn On Label Prompt (Figure 2).

AVI Movie File

In the PC Windows version, the user can easily save an animation in AVI file format using File > Save AVI. Here, we give some pointers to achieve optimum results for the AVI movie creation.

By default, the AUI uses the entire graphics window region to display the graphics. This is the size of the plotting frame. The aspect ratio of the frame may not be suitable if you want to create an AVI movie with a square size or a specified size of 640 by 480 pixels.

The frame size can be easily changed through the Edit > Graphics Window Settings dialog box. First, toggle on the "Specify Aspect Ratio of Frame". Then, use the default ratio of 1.3333 if you want a movie with size of 640 by 480 (or 800 by 600) or set the aspect ratio to 1 for a square size movie.

Next, clear the screen for the new frame to take effect, create your animation and save the AVI movie in the size you want.

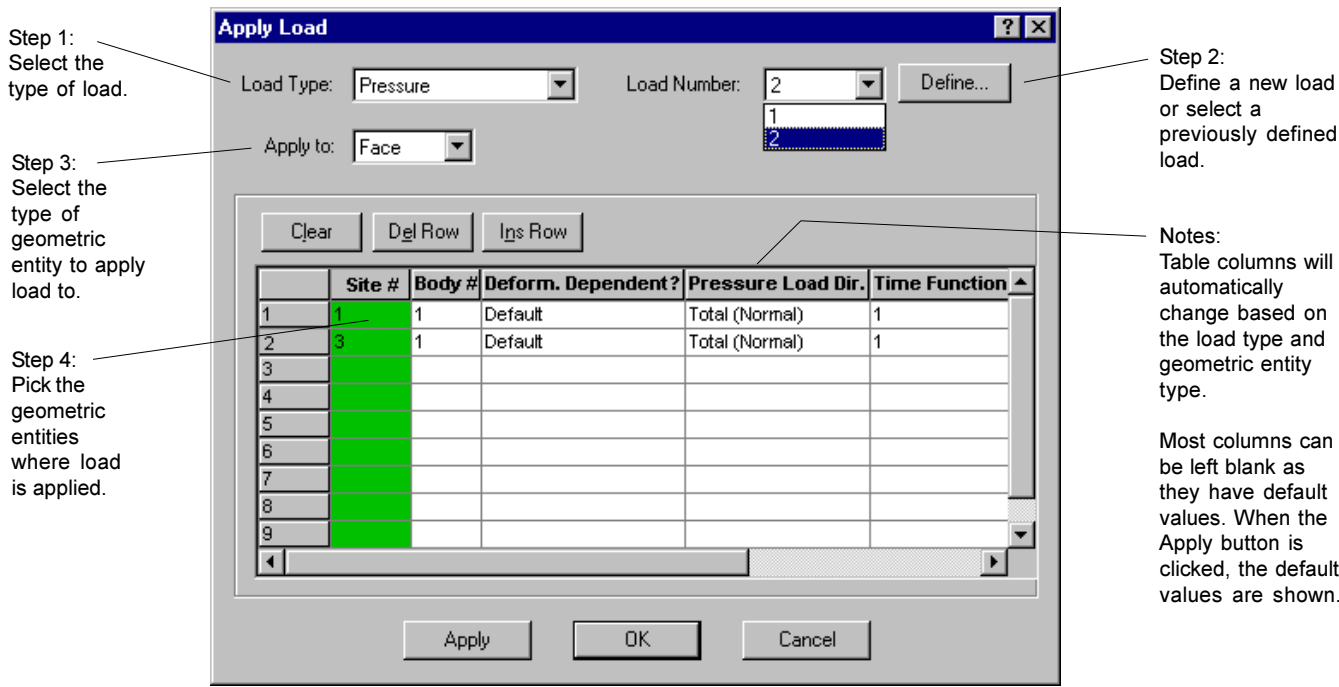


Figure 3: Load Application Simplified

Easier Load Application

The Apply Load dialog box has been completely redesigned to greatly simplify the procedure. As illustrated in Figure 3, the steps to apply loading on the model is made much more intuitive.

Better Messages during Solution

During the solution process, messages are displayed in the user interface to inform the user about the progress of the solution. Error and warning messages are also displayed in the interface when appropriate.

Figure 4 shows the enhanced interface and highlights some of the messages.

We have also made it much easier for you to communicate any error messages to us. By using the keystrokes Ctrl-C, the messages in the interface will be copied to the clipboard. You can then use Ctrl-V to paste the messages to your email program and send it to us.

First M.I.T. Conference on Computational Fluid and Solid Mechanics, June 12-14, 2001

As many of you are aware, the last ADINA Conference was held in June 1999. We now look forward to the First M.I.T. Conference on Computational Fluid and Solid Mechanics on June 12-14, 2001. This Conference is sponsored by M.I.T., General Motors, Ford, DaimlerChrysler, HP, Sun, SGI, Texas Instruments, Compaq, MSC Software, ESI Group, ADINA, Mecalog, CINI, Fluent, and Boeing.

In addition to the usual scientific objectives, two specific aims of the M.I.T. Conference are, to bring together Industry and Academia, and to have many young researchers and developers attend the Conference. The sponsors have made it possible to invite more than one hundred young researchers with all expenses paid.

We hope that many of you will submit papers and attend the Conference.

You can find more information on the Conference at <http://www.firstmitconference.org>.

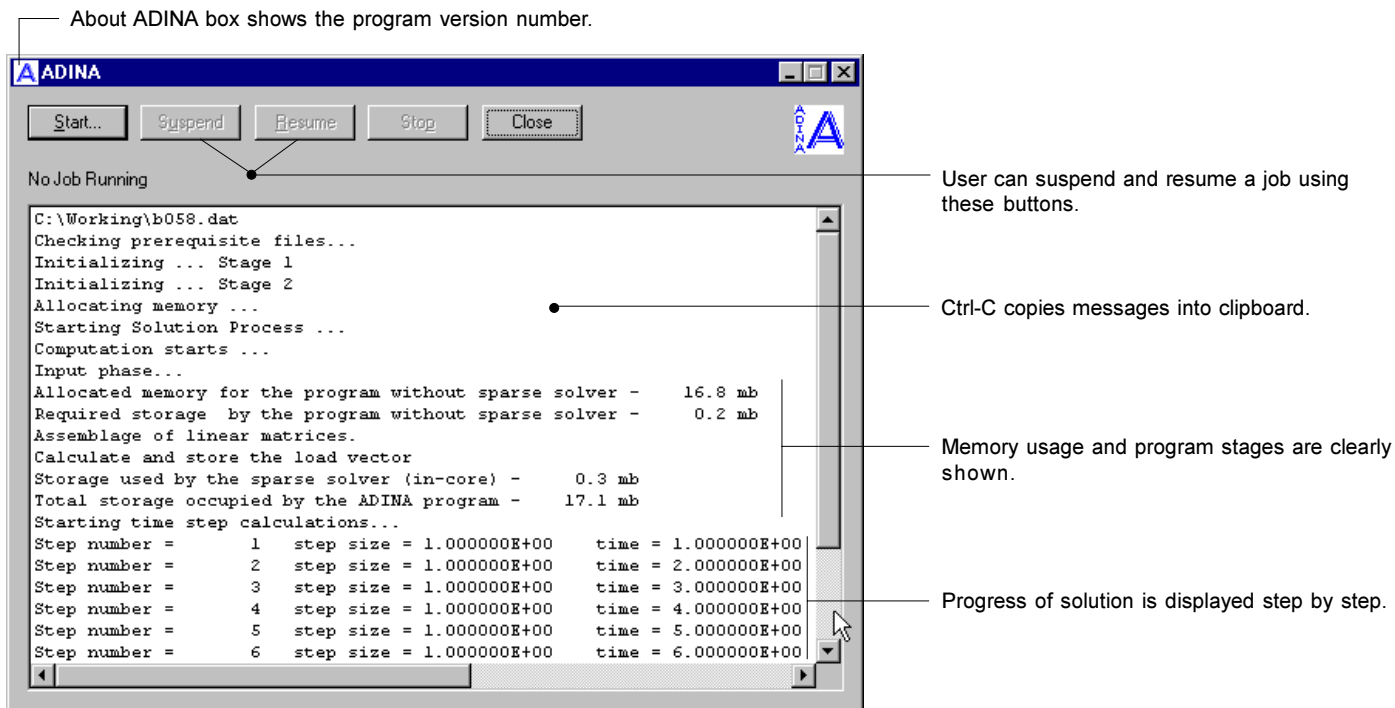


Figure 4: Better Messages during Solution

No Need for Dongle

For ADINA 7.4, there is no longer the need to use the dongle on the PC. If a network card is present, the ADINA license will be tied to the network card ID. Otherwise, an alternative machine ID will be used for the ADINA passwords.

For those users who are currently using dongles, ADINA 7.4 will continue to work with the dongles. There is no need to change to the new machine ID locking method.

Porthole Binary Compatibility

In ADINA 7.4, binary porthole files from Unix machines can be read directly by the PC Windows version. Results obtained on Unix machines can thus be post-processed on the PC.

Correction

The bitmap file formats supported in ADINA 7.4 are DIB, BMP and JPEG and not PCX as stated in the last newsletter. We apologize for the mistake.



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