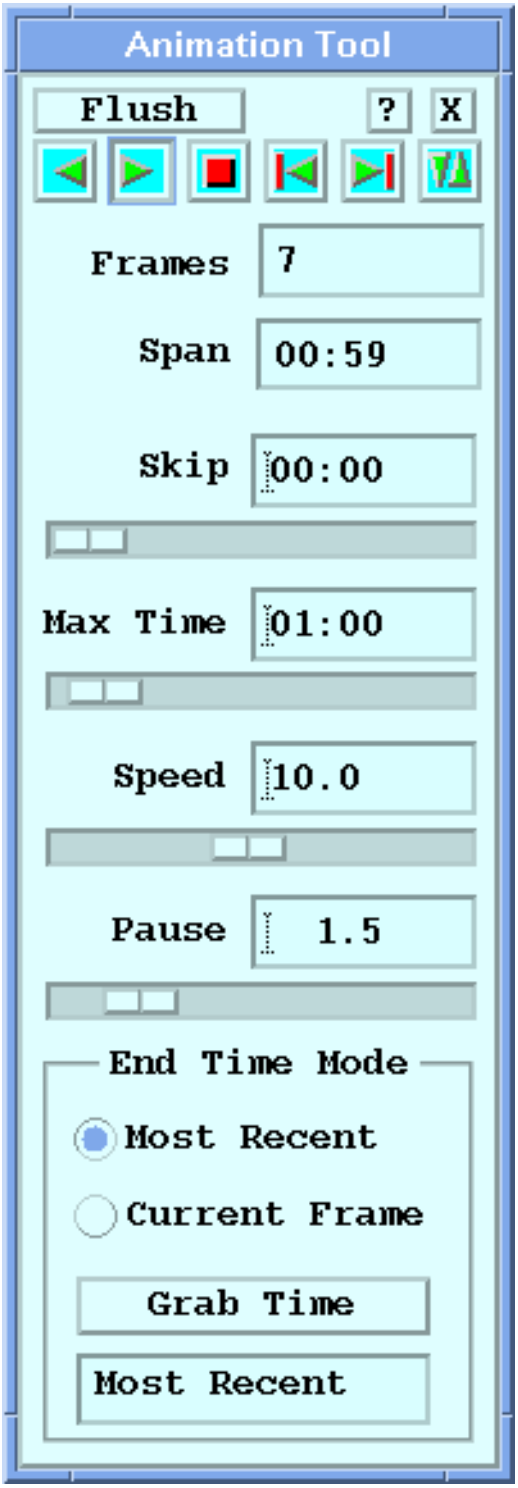
5.9 Animation or Loop Tool



Overview

Animation is one of the best ways for forecasters to observe the motion, growth and decay of radar echoes. In real time applications, many IRIS users leave a loop running constantly. Additionally, the **Slide Show** tool (see section 5.10) can be used to automate the display of different products from different times.The **Animation** or **Loop** tool provides control of the animation sequence. In addition, loop/browse control buttons are also provided in the **Legend** area so that they are always hand for image manipulation. This section describes the various animation features in IRIS.

Loop Start and Stop Buttons

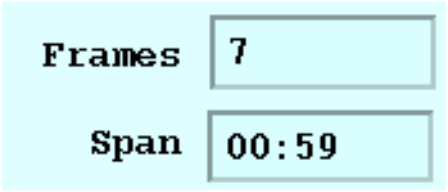
These buttons are available in the Loop tool and in the Legend area. The functions are:

- Right arrow to start the loop in forward play mode.
- Left arrow to start the loop in reverse play mode.
- Left and right arrow to start the loop in swing mode (forward then backward).
- Red square button to stop, although clicking on a depressed button loop button or on the single step or toggle buttons will also stop the loop.

Keyboard Tip: SPACE BAR will stop a loop or start it in the forward play direction. The cursor must be in the image area of the loop for this to work.

Automatic Site Filtering: When a loop is started, the Site filter will automatically be set to match the loop so that only images from the site (for which the loop was started) will be displayed.

Loop Loading and Status



When a loop is loading, it will show haw many frames have been loaded and how many total frames are available (29/30 in the example) . The loop will start playing immediately, even while it is loading so that for very long loops of say 100 frames, you do not have to wait for the loop to be fully loaded before it is playing at loop speed. This “looping while loading” slows down the load process a little, but for long loops it is much better for the user.

After the loading is complete, a single number, in the example it would be 30, indicates the number of frames in the loop. The time span of the loop is also shown. This is the *actual* span of the frames in the loop as opposed to the Max Time that is requested.

There are several factors that determine the number of frames in a loop:

- **Device Movie Length** and default window size as configured in setup/output. If your window size is the same as the setup/output default size this is the maximum number of frames you will ever expect to see. If you reset your window size to be smaller than the default size, then you will get more frames, since the same amount of memory is allocated for movies. Likewise, if you set you window size to be larger than the default, you will get fewer frames.
- **Max Time** (see below) determines the maximum possible span of the movie. This will limit the number of frames.
- The number of frames that are available on disk. This is easy to check by looking at the **Time** icon.

Flush the Loop Buffer 

The loops are "sticky"– the frames are all kept in a loop buffer so the loop does not have to reload if it is stopped and restarted. This is a great convenience when you are working with long loops.

If you make a change to the window such as the color scale or the Display Options, the buffer will automatically "flush" so that the loop will be forced to reload with your changes. SIGMET has tried to anticipate every action that might require a loop to be flushed and reloaded, but in case we haven't or your loop buffer somehow becomes corrupted, you can use the manual Flush button to refresh the buffer. The loop will then reload the next time that it is started.

Previous/Next 

These buttons allow you single step forward and back through the loop. This is nearly identical to clicking in the **Time Slider** or using the left/right arrow keys on the keyboard (with your cursor in the image area).

Toggle Button 

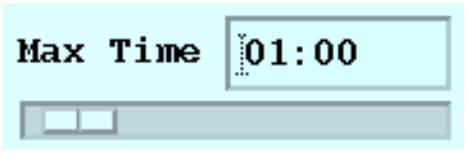
The Toggle button swaps between the current image and the previous image on the display, regardless of the image type or time. Sometimes this is useful for comparing two different products (e.g., TOPS and VIL). Display both products, then use the Toggle icon to alternately display one, then the other.

Hint: It is very convenient that when the cursor is used, the position will be displayed correctly in the two toggle frames, even if their scales are radically different.

Skip Time

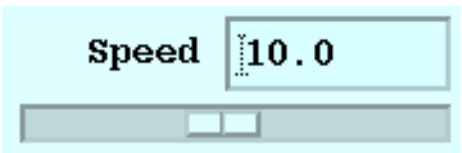
If you want to loop a long time series of data, say 24 hours, it is usually necessary to skip some frames so that you can display the entire 24-hour span without exceeding your **Device Movie Length** for the maximum number of frames. Specify the time skip in HH:MM. If you specify 01:00 (one hour) then a 24 hour movie will have 24 frames. The skipping algorithm will attempt to show the frames that are exactly on or as close as possible to intervals of the skip time. In the case of a one hour skip time, the frames would be on or as close as possible to just after the hour.

Max Time



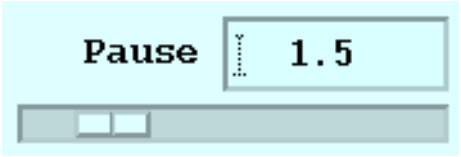
This is the maximum time span that will be allowed. You may not be able to achieve this since there may not be sufficient frames on the disk or you may be limited by the Device Movie Length frame/memory limit as configured in **setup/output.** The actual time span that you achieve will be displayed in the **Span** field.

Speed



This is the requested speed in frames per second. Faster is to the right, slower is to the left. Whether you will be able to achieve a speed will depend on the speed of your CPU, the amount of memory that you have and the size of image that you are looping.

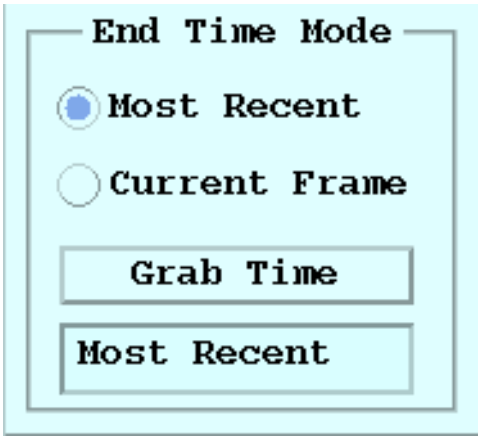
Pause



This is the pause in seconds between successive loops. Aside from marking the end of a loop, Pause gives the computer a chance to rest and do other things. For example, setting a very short pause of 0.0 sec will run the loop continuously, but the computer will be busier. Other tasks such as loading the loop will take longer, so use common sense. If your computer seems too busy, then lengthen the pause. The 1.5 second default value is a good compromise.

Caution: High-speed loops of large images place a greater demand on both CPU and memory. By running several large format loops at high speed with no pause, you can use near 100% of your CPU and memory depending on your system hardware configuration. So be careful and consider the other things that you may be asking IRIS to do on your system such as product generation and data acquisition from the radar. The default values for Speed and Pause are reasonable starting points.

Setting the Loop End Time



Usually the last frame in the loop is set to be the **Most Recent** picture. In this case, new data are added automatically to the loop. This allows you to leave a loop running on a display so that you can always see the current situation. Note that when the loop end time is set to most recent (the default), the Mode Indicator at the top will show:

The green background behind “User” indicates that the display will automatically update with new images.

The **Current Frame** and **Grab Time** options allow you to fix the end time for occasions when you want to create loops that do not end with the most recent image, e.g., for analysis of archive data from last year.

Current Frame mode sets the loop end time to be the time of the image that is currently in the window when the loop is started. Simply browse through the images until you decide what frame should be the last frame and then start the loop. The loop will end on the frame that you selected. This is very handy for analysis. Remember that, as you start and stop loops in this mode, the end time is not fixed– it will be readjusted every time that the loop is restarted.

Grab Time allows you to select a specific time for the end of the loop. Simply brows through the images until you find the image that you want to be the last frame and click **Grab Time** to latch this time**.** Even if you change product types, any loops started will use this as the end time.

For **Current Frame** and **Grab Time** the loops will not update automatically so avoid leaving the displays in these modes since it could confuse other users. To indicate that the loop does not reflect the most recent data, the Mode will show a red indicator background color.