

Chapter 23

Animating Graphs

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Chapter 23

Animating Graphs

SAS/INSIGHT software provides two ways to *animate* graphs.

You can animate selected observations in all graphs simultaneously. This produces the same visual effect as brushing but gives you precise control over the display.

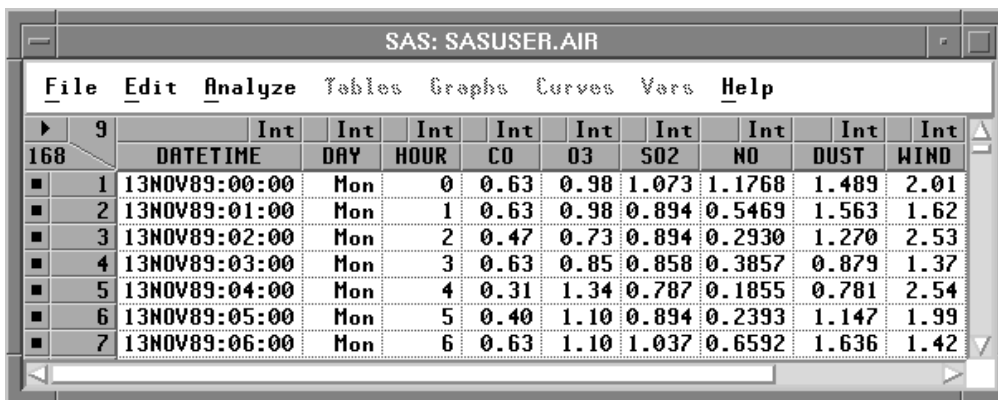
You can animate selected graphs individually. This restricts the animation to one graph and animates observations and other graph features.

Animating Selection of Observations

To animate the selection of observations, follow these steps.

⇒ **Open the AIR data set.**

This data set contains measurements of carbon monoxide and sulfur dioxide in city air over various times and dates. Since these data are time-dependent, they are a good subject for animation.



	Int	Int	Int	Int	Int	Int	Int	Int	Int
168	DATETIME	DAY	HOUR	CO	O3	SO2	NO	DUST	WIND
1	13NOV89:00:00	Mon	0	0.63	0.98	1.073	1.1768	1.489	2.01
2	13NOV89:01:00	Mon	1	0.63	0.98	0.894	0.5469	1.563	1.62
3	13NOV89:02:00	Mon	2	0.47	0.73	0.894	0.2930	1.270	2.53
4	13NOV89:03:00	Mon	3	0.63	0.85	0.858	0.3857	0.879	1.37
5	13NOV89:04:00	Mon	4	0.31	1.34	0.787	0.1855	0.781	2.54
6	13NOV89:05:00	Mon	5	0.40	1.10	0.894	0.2393	1.147	1.99
7	13NOV89:06:00	Mon	6	0.63	1.10	1.037	0.6592	1.636	1.42

Figure 23.1. AIR Data

⇒ **Select CO, then SO2 in the data window using extended selection.**

⇒ **Choose Analyze:Scatter Plot (Y X).**
This creates a scatter plot of **CO** versus **SO2**.

⇒ **Choose Edit:Windows:Animate.**

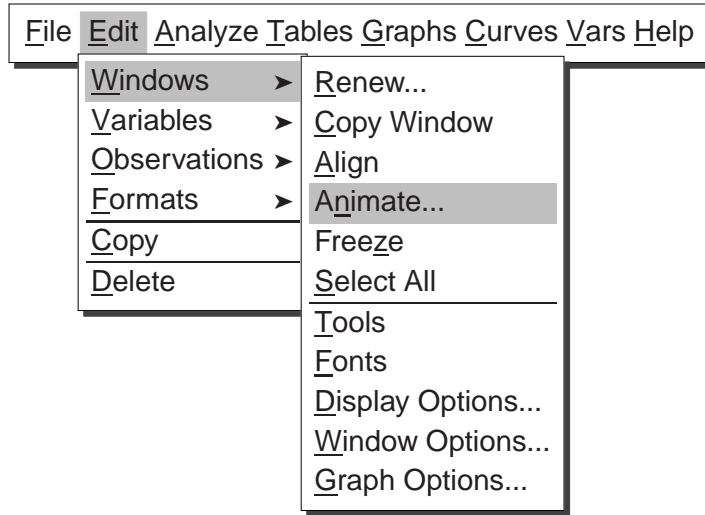


Figure 23.2. Edit:Windows Menu

This displays the animation dialog. The animation dialog contains a list of variables, a list of values, and a slider to control speed.



Figure 23.3. Animation Dialog

⇒ **Select DAY in the list of variables, then click the Apply button.**

This animates the selection of observations over all values of **DAY** in the order in which they are displayed in the animation dialog. Observations are selected in both the scatter plot and the data window, and the current value is selected in the animation dialog.

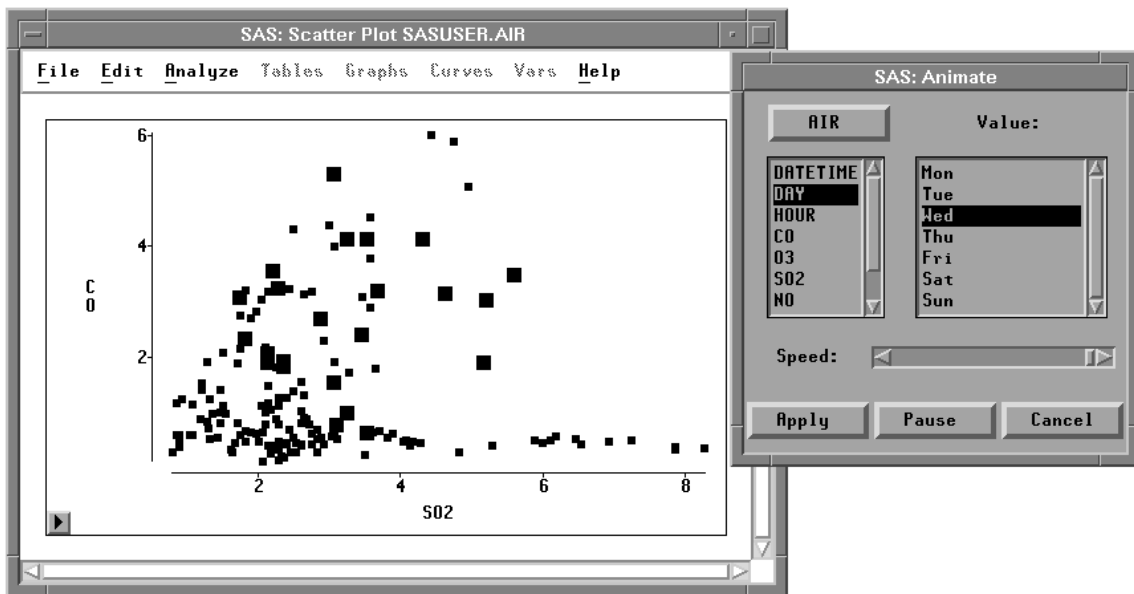


Figure 23.4. Animating Selection of Observations

⇒ **Adjust speed by clicking or dragging on the slider.**

When the slider is at the extreme left, speed is slowest; at the right, speed is fastest. Animation speed also depends on the speed of your host, the number of observations in your data set, and the number of graphs displayed.

⇒ **Click the **Pause** button to stop the animation.**

You can make the pattern of animation clearer by toggling the display of observations.

⇒ **Choose **Observations** from the scatter plot pop-up menu.**

This turns off the display of all deselected observations.

⇒ **Click the **Apply** button to restart the animation.**

You should begin to see the conditional distributions of **CO** and **SO2** as **DAY** varies over the day of the week.

⇒ **Click in the **Value** list in the animation dialog.**

This enables you to stop the animation on particular values. You can click in the **Value** list to compare pollutant concentrations on different days.

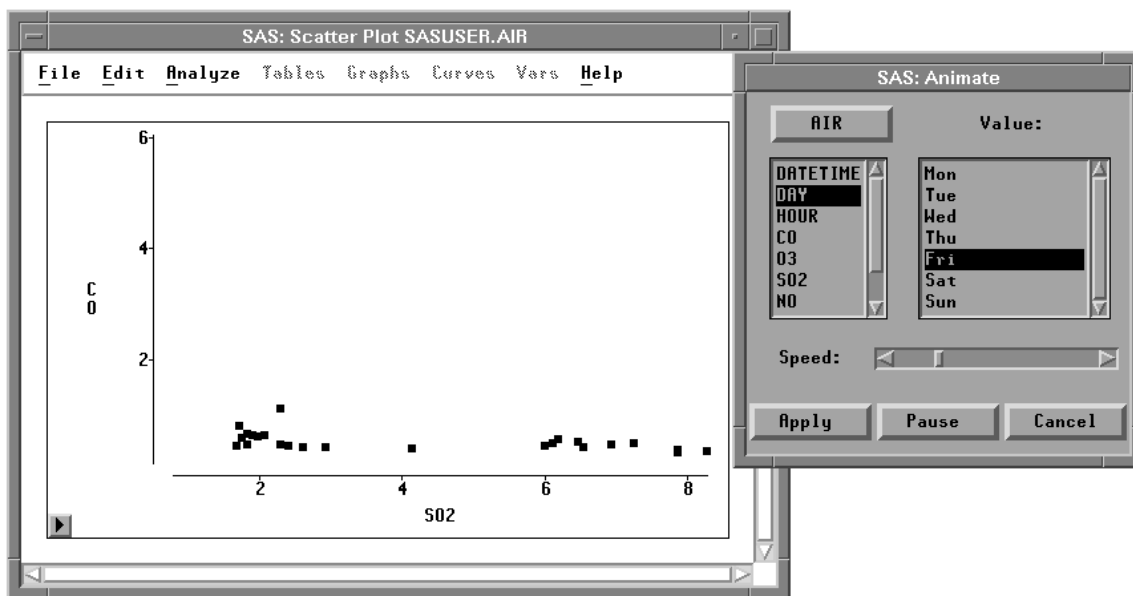


Figure 23.5. Animating Only Selected Observations

The concentrations of CO and SO₂ vary widely through most of the days but are much lower on Saturday and Sunday. Carbon monoxide is produced primarily by automobile exhaust, and automobile traffic appears to be reduced on the weekends. Sulfur dioxide concentrations are also lower; this pollutant is produced by power plants that operate at a reduced rate on weekends.

Animating Selected Graphs

Line plots are an effective way to look at time-dependent data. You can animate line plots and other graphs by selecting them before using the animation dialog. This animates lines and other features in the graph, not just selected observations.

⇒ **Select CO, then SO2, then HOUR in the data window.**

The last variable you select, **HOUR**, will receive the **X** role in the line plot.

⇒ **Choose Analyze:Line Plot (Y X).**

This creates a plot with two overlaid lines. The lines are jagged because the data contain seven observations for each hour.

⇒ **Select the line plot by clicking on any edge.**

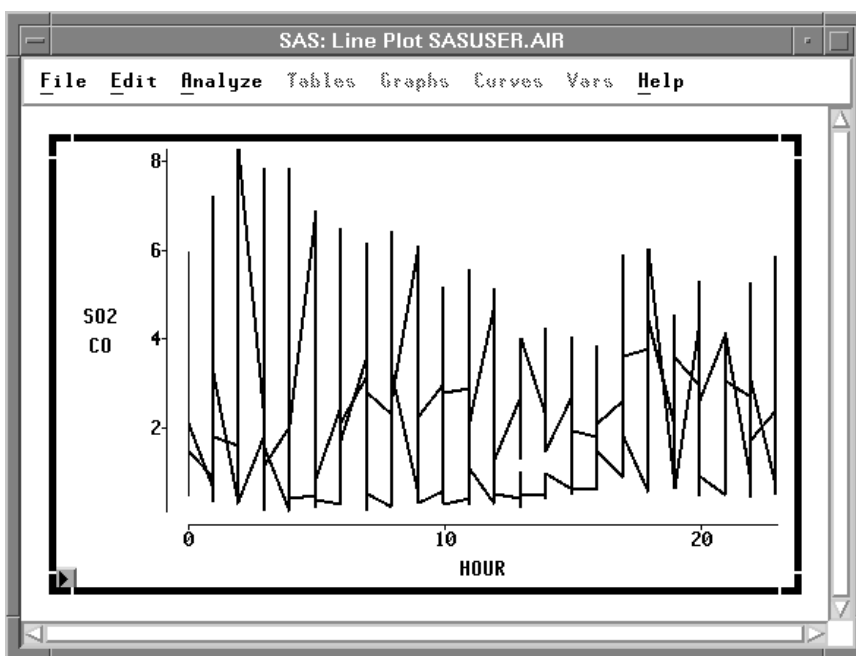


Figure 23.6. Selected Line Plot

⇒ **Select DAY in the animation dialog, then click the Apply button.**

This animates the line plot, showing pollutant concentrations for each day of the week.

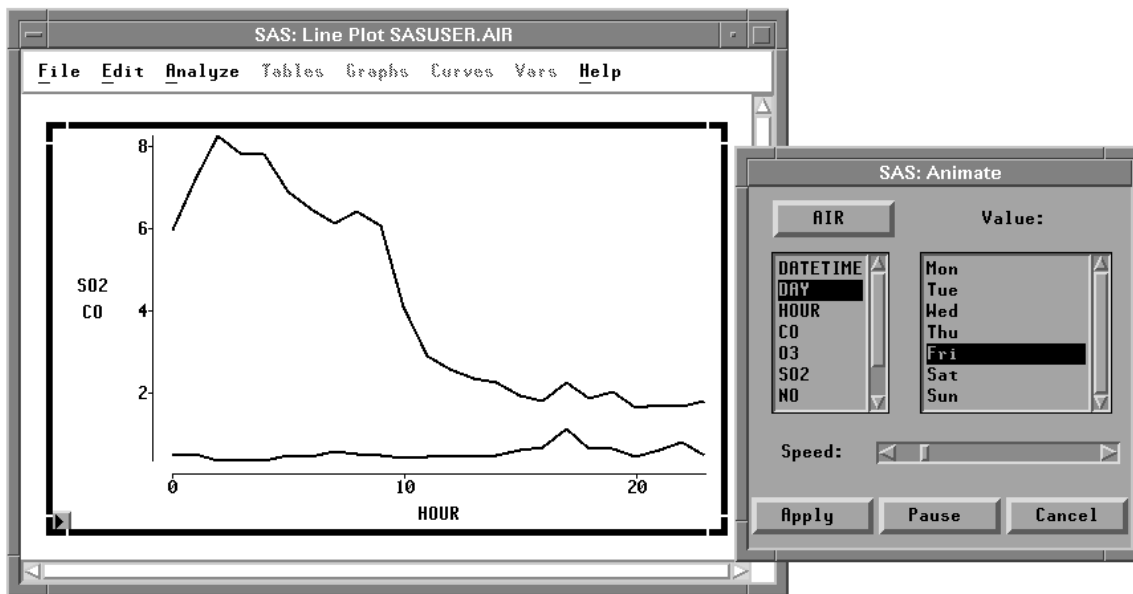


Figure 23.7. Animating a Line Plot

Notice the peak CO concentrations on weekday mornings and afternoons. These might be caused by increased automobile emissions during rush-hour traffic.

⇒ **When you are finished, click **Cancel** to close the animation dialog.**

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