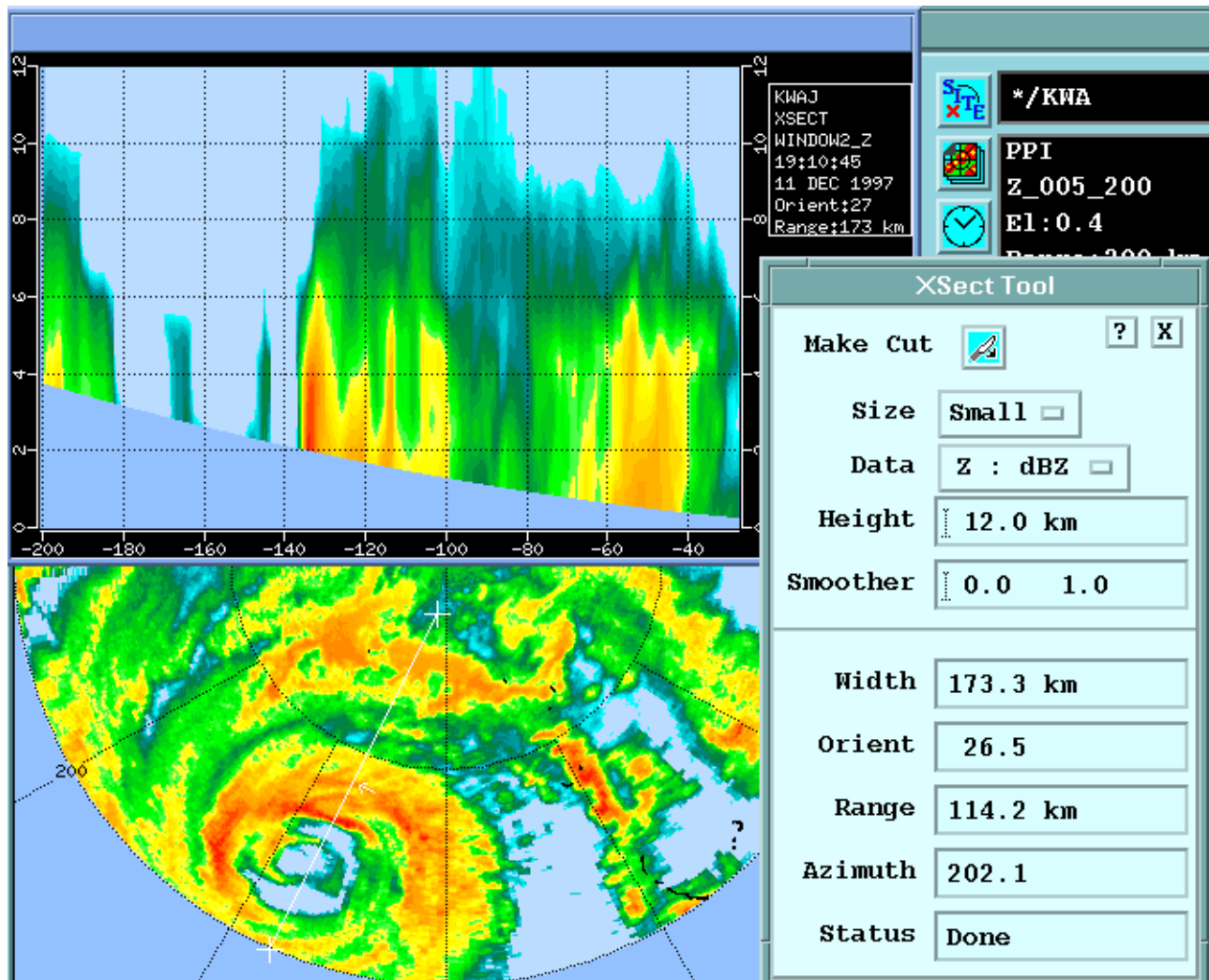




## 5.14 Cross-Section (XSECT) Tool

The interactive cross-section is one of the best ways to see storm structure and echo heights. An example through a typhoon is shown below.



The window at the top left is a small format XSECT window. This appears automatically when you make a cross-section. Note that the radar cannot see all the way to the surface of the earth, hence the curved boundary at the bottom of the cross-section.

The cross-section line is shown on the display. The small arrow at the center of the line shows how your eye will view the cross-section. In this case the cross-section is viewed from the east through the eye of the typhoon.

The XSECT tool is shown at the right of the example. This allows you to configure nearly all aspects of the cross-section.

When you make a cross-section, select an appropriate “base” product. Note that products such as RAIN1 and RAINN cannot be used for a cross-section since they do not represent a specific time.

Click on the XSECT tool (the icon with the cutting knife) and then use the mouse to position the endpoints of the cross-section line. Configure the cross-section menu and then click the XSECT icon in the menu to make the cut. The status of your cross-section progress is shown at the bottom. In a system that is not busy, the cross-section is generated in about 1–3 seconds depending on your particular workstation speed.



**Cross-sections are generated by interpolation of the original polar data. Therefore to make a cross-section, you must have ingest files from the signal processor or from RAW data on your system. If the window is exported from another system to your screen then that system will need to have the ingest files.**

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The features of the XSECT tool are described below.

## Height

Height 12.0 km

Specify the height of the cross-section in km to the nearest 0.1 km (100m).

## Data

**Data**    **Z : dBZ** ☐

<b>Z : dBZ</b>
<b>Z : R</b>
<b>V : V</b>
<b>W : W</b>
<b>T : dBZt</b>
<b>T : R</b>
<b>Zd : ZDR</b>
<b>Kd : Kdp</b>
<b>Kd : R</b>

Select the data types from the list. The left variable represents the input data type, the right variable represents what will be displayed. A polarization diversity example is shown here.

## Size

**Size**    **Small** ☐


Select either a large or a small size window. Small size is usually better since it takes up less screen area and generates more quickly.

## Smoother

**Smoother**    **0.0    1.0**

Select the horizontal and vertical smoother length scale in km.

## Make Cut

**Make Cut**    

After all is configured, click this icon to make the cross-section. Monitor the progress in the Status field at the bottom of the **XSECT** tool.

## Status

Width	173.3 km
Orient	26.5
Range	114.2 km
Azimuth	202.1
Status	

The top 4 lines of the status section show the configuration of the cross-section line. Range and azimuth refer to the center point of the line. The bottom line shows the status such as “Setup”, “Running” and “Done”.

If the Ingest data for the data time that you have requested (i.e., the time of the base product) are not on disk, then the status will show “Error” and a pop-up message will inform you the the ingest files were unavailable. In this case, browse forward in time and try again, or check the Ingest Summary Menu to see what data are available.

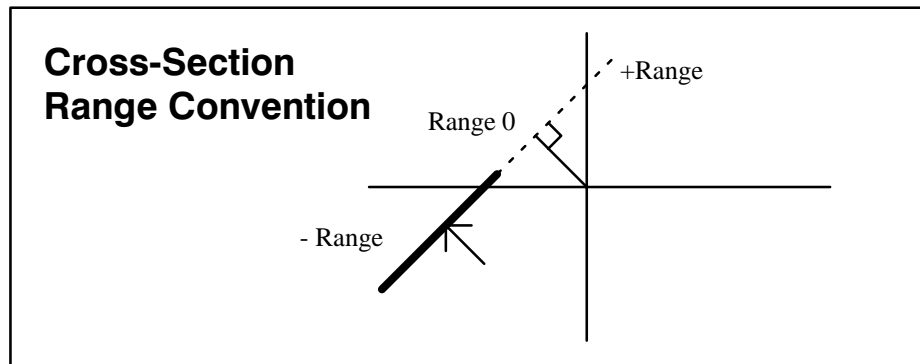
## Cross-Section Display Color Scales

The cross-section will use the color scale that is configured in the **Color Scale** tool for the data type that is being displayed. A nice side effect of this is that the cross-section and base product color scales will match if they have the same data type. For example, if you ask for a cross-section of dBZ and the base product is dBZ, the color scale of the cross-section will match the input product.

If you want to change the color scale in the cross-section, use the **Color Scale** tool and select the data type (dBZ, V, etc.). Then re-make the XSECT. The new colors will be applied when the cross-section is re-made.

## Cross-Section Range Scale

The height range scale is either km or thousands of feet and the horizontal range scale is either km or nautical miles according to the units selection in the **Display Options** tool. The origin (range zero) corresponds to the point on the line or its extension that is closest to the radar. In other words, the origin is the point where the line or an extension of the line would be at a right angle to a line drawn from the radar. This is shown in the figure below.



### Cross-Section Display in Standard Window

The cross-sections that you make can also be displayed in a standard window. Use the product selection features just as you would for any other product. The cross-sections will inherit the name of your window and the data type when they are listed in the product selection tool.