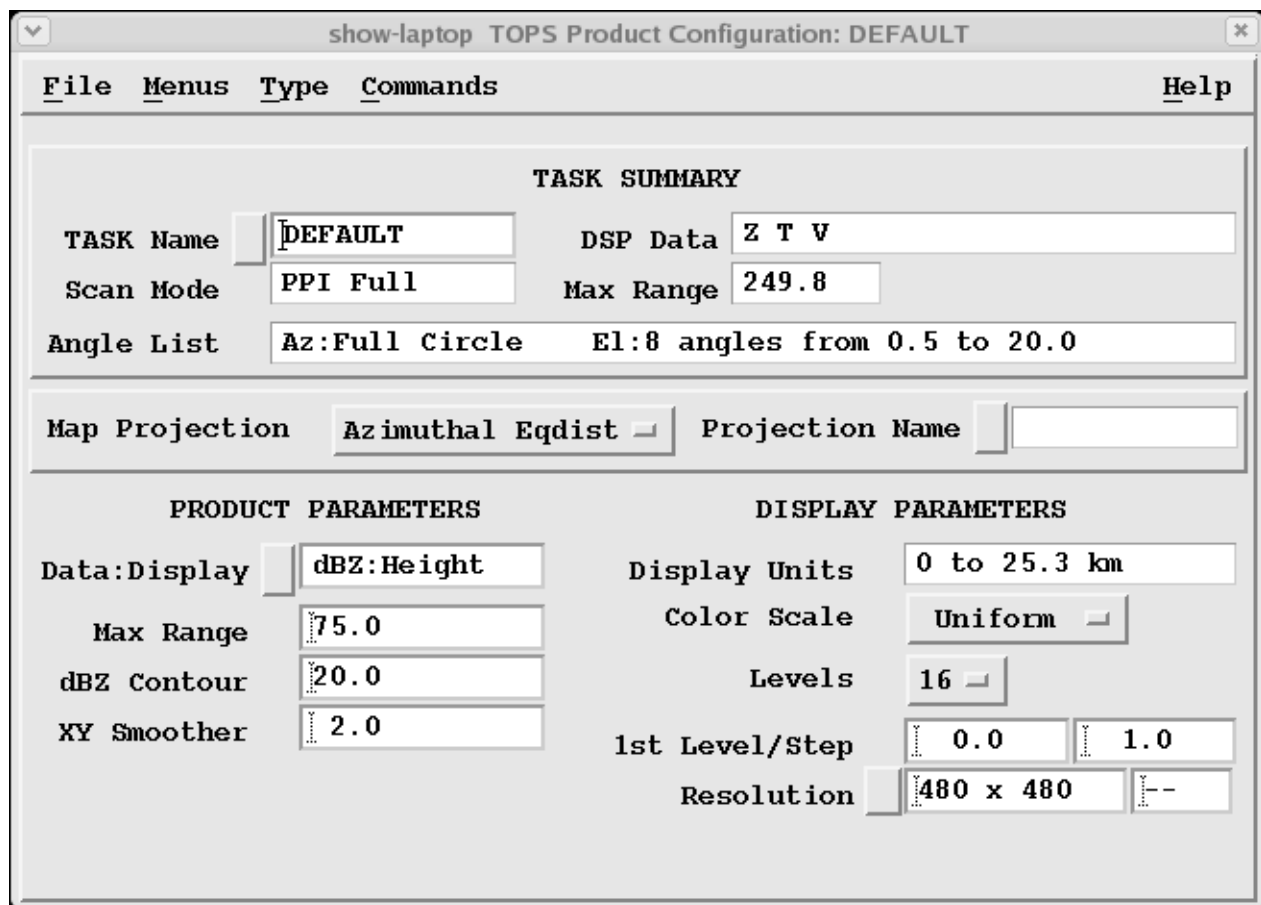


## 2.16 TOPS: Echo Tops



show-laptop TOPS Product Configuration: DEFAULT

**File Menus Type Commands Help**

**TASK SUMMARY**

TASK Name:  DSP Data:

Scan Mode:  Max Range:

Angle List:

Map Projection:  Projection Name:

**PRODUCT PARAMETERS**

Data:Display:

Max Range:

dBZ Contour:

XY Smoother:

**DISPLAY PARAMETERS**

Display Units:

Color Scale:

Levels:

1st Level/Step:

Resolution:

This section describes the fields of the Product Configuration menu that are unique to TOPS products. For general information, see these other sections of this chapter:

- Task Summary area, Section 2.1.1.
- Map Projection Area, Section 2.1.2
- Product Parameters, see Section 2.1.3.
- Display Parameters area, Section 2.1.4.

The TOPS product is a display image of the height of the highest occurrence of a selectable threshold dBZ contour. Heights are displayed in kilometers and tenths of kilometers. A PPI volume scan TASK is required (either FULL or SECTOR).

The TOPS product is an excellent indicator of severe weather and hail. For example, a 50 dBZ top 1 km above the freezing level can be produced only by a vigorous convective storm, and is most probably caused by the presence of hail. For air traffic applications, the search can be made using a lower threshold value, such as 10 dBZ, to determine the height of surrounding precipitation.

## To open the TOPS Product Configuration menu:

Choose **Type**→**TOPS** from the menu bar.

### Data : Display

Z	Height	The product can be derived from either Z or T data. If Z is selected as the Product Data parameter, but at run time only T is available (or vice versa), the product runs with the available data parameter.
T	Height	

### dBZ Contour

You can select the threshold contour level in dBZ. The TOPS algorithm then makes a downward search at constant range in cylindrical coordinates to determine when the threshold is crossed. It then interpolates in height to obtain the height of the threshold contour. Similar to the CAPPI, there must be an elevation tilt both above and below the contour to obtain a valid top height.

When the downward search detects a dBZ value greater than the threshold, there are three cases:

<b>Normal Case</b>	The dBZ value in the next higher ray (elevation angle) at the same surface range is used to interpolate the height of the contour that must lie in between.
<b>Undetected Echo Aloft</b>	If there is no detectable echo in the next higher ray aloft, then an interpolation cannot be done. However, a top must exist somewhere between these two rays. In this case, the top height is taken as the height of the point where the detection of dBZ >> Threshold was made.
<b>No Ray Aloft</b>	If there is no higher elevation angle aloft, then a top exists somewhere aloft, but there is no information as to how much higher the top may be. In this case a special color (indicated by “???” in the legend) denotes that an indeterminate top exists.

For example, at ranges less than 5 km in the volume scan shown in Figure 2–1, the algorithm cannot determine tops that are above the highest elevation angle.