GEMPAK Programs: snmap

SNMAP plots sounding data on a map.

**INPUT PARAMETERS** (* denotes parameters that will be used most often)

*AREA     Data area
*GAREA    Graphics area
SATFIL   Satellite image filename(s)
RADFIL    Radar image filename(s)
IMCBAR    Color/ornt/anch/x;y/ln;wd/freq
*SNPARM   Sounding parameter list
*DATTIM   Date/time
*LEVELS   Vertical levels
VCOORD    Vertical coordinate type
*SNFILE   Sounding data file
COLORS    Color list
MAP       Map color/dash/width/filter flag
MSCALE    fgc;bgc;mask/units/lat;hide/values/anch/x;y/ln;wd/freq|text_info|title
LATLON    Line color/dash/width/freq/inc/label/format
*TITLE    Title color/line/title
CLEAR     Clear screen flag
PANEL     Panel loc/color/dash/width/regn
*DEVICE   Device|name|x size;y size|color type
PROJ      Map projection/angles/margins|drop flag
FILTER    Filter data factor
TEXT      Size/fnt/width/brdr/N-rot/just/hw flg
LUTFIL    Enhancement lookup table filename
STNPLT    Txtc/txt attr|marker attr|stnfil#col

**PROGRAM DESCRIPTION**

SNMAP plots sounding data parameters at station locations on a map. Any level or station parameter that can be computed can be displayed. Data may be plotted in any valid GEMPAK projection and may be overlaid on images.

A list of times may be given in DATTIM allowing animation of sounding plots.

The order of the input parameters determines their location on the plot. Parameters are separated by semicolons. A position may be skipped by entering two consecutive semicolons or entering parameter SPAC or BLNK. A parameter will be plotted centered at the station if it is the first parameter in the list. If no parameter is to be displayed centered on the station location, a semicolon must appear before the first parameter, or the first parameter must be either SPAC or BLNK. The following chart shows the placement of the data around the station. The number indicates the
position of the parameter in the SNPARM list:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>11</td>
<td>7</td>
</tr>
</tbody>
</table>

Note that wind symbols and markers are always plotted at the center.

Station data will be filtered; i.e., overlapping stations will not be plotted, if FILTER is set to YES. FILTER may also be entered as a number greater than or equal to zero. FILTER = NO has the same effect as FILTER = 0. FILTER = 1 has the same effect as FILTER = YES. Values less than 1 allow more crowding of stations, values exceeding 1 less crowding. If a parameter is BLNK, the filter will not allocate any space for that parameter. The parameter SPAC may be used to reserve the space with the FILTER option so that later calls will plot the same stations after filtering, provided that the same number of parameters is specified.

If certain stations are not to be removed by the filter, these stations are listed first following an @. The area over which filtering is to occur is specified after a slash. For example,

```
AREA   = @iad;hts;rap/us
FILTER = YES
```

will display a filtered array of stations over the area corresponding to US, but IAD, HTS and RAP will be shown regardless of the filtering.

Either wind barbs or wind arrows can be plotted, by specifying a wind symbol parameter name in the list of parameters for SNPARM. The wind barb or arrow is plotted at the station location according to the type specification, which is entered as described in the SNPARM documentation.

Conditions can be specified for the parameters. The conditions are documented in the SNPARM documentation. Note that individual parameters can be scaled using these conditional functions. For example, TMPC*10 will plot temperature multiplied by 10.

EXAMPLES

1. Plot a polar stereographic map of stations in the Eastern United States at 850 mb for all times in the data file. Plot a standard station model for each location. The upper air data to plot include: 1) wind barbs in knots; 2) temperature in Celsius; 3) coded height; 4) dewpoint depression in Celsius; and 5) station ID. The data are plotted using the specified color list.

```
AREA   = east-
GAREA  = east
```
2. Plot the temperature and height at 500 mb and the lifted index for all times in the data file. The data are plotted at the stations where the temperature is less than -8 degrees Celsius. The lifted index is multiplied by 10 before being plotted.

ERROR MESSAGES
+1  ! Parameter !AS cannot be computed.
-1  ! Fatal error initializing TAE.
-2  ! Fatal error reading TAE parameters.
-3  ! Fatal error initializing GEMPLT.
-4  ! Invalid levels or vertical coordinate have been input.
-5  ! A range of levels is invalid in SNMAP.
-6  ! Winds cannot be computed.