NAME

mbsvplist – List water sound velocity profiles in swath sonar data files.

VERSION

Version 5.0

SYNOPSIS

mbsvplist [**–C –D –F***format* **–H –I***file* **–M***mode* **–O –P –S –V –Z**]

DESCRIPTION

This program, **mbsvplist**, lists all water sound velocity profiles (SVPs) within swath data files. Swath bathymetry is calculated from raw angles and travel times by raytracing through a model of the speed of sound in water. Many swath data formats allow SVPs to be embedded in the data, and often the SVPs used to calculate the data will be included. By default, all unique SVPs encountered are listed to stdout. The SVPs may instead be written to individual files with names FILE_XXX.svp, where FILE is the swath data filename and XXX is the SVP count within the file. The SVP files output by **mbsvplist** include a header line starting with "## MB-SVP" and including the timestamp and location of the SVP record as inferred from its location in the file. This header record is recognized by the program **mbsvpselect** which uses the information to select the best SVP models to apply to swath data files for bathymetry recalculation. Some files contain SVPs at regular intervals, typically with the same SVP duplicated many times. By default, **mbsvplist** ignores duplicate SVPs. The **–D** option causes duplicate SVPs to be output. The **–P** option implies **–O**, and also causes the parameter file to be modified so that the first SVP output for each file becomes the SVP used for recalculating bathymetry for that swath file. The **–C** option causes **mbsvplist** to output the number of unique SVPs in a file to the shell (standard out). The **–S** option causes **mbsvplist** to output the sound velocity values used for beamforming by the sonar (often called surface sound velocity, or SSV) instead of SVP profiles. Each SSV value will be paired with the corresponding sonar depth, and there will generally be one SSV value output for each survey ping.

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OPTIONS

–C

Causes **mbsvplist** to output the number of unique SVPs in each file to the shell (standard out).

–D

Causes **mbsvplist** to output duplicate SVPs. This is equivalent to **–M***2*.

–F *format*

Sets the format for the input swath sonar data using **MBIO** integer format identifiers. If *format* < 0, then the input file specified with the **–I** option will actually contain a list of input swath sonar data files. This program uses the **MBIO** library and will read any swath sonar format supported by **MBIO**. A list of the swath sonar data formats currently supported by **MBIO** and their identifier values is given in the **MBIO** manual page.

–H This "help" flag cause the program to print out a description of its operation and then exit immediately.

–I *file*

Sets the input filename. If *format* > 0 (set with the **–F** option) then the swath sonar data contained in *file* is read and processed. If *format* < 0, then *file* is assumed to be an ascii file containing a list of the input swath sonar data files to be processed and their formats. The program will read the data in each one of these files. In the *file* file, each data file should be followed by a data format identifier, e.g.:

datafile1 11
datafile2 24

This program uses the **MBIO** library and will read or write any swath sonar format supported by **MBIO**. A list of the swath sonar data formats currently supported by **MBIO** and their identifier values is given in the **MBIO** manual page. Default: *file* = "datalist.mb-1".

–M *mode*
Sets the SVP output mode. If *mode*=0 (the default), then the first SVP of each file will be output, plus any SVP that is different from the previous SVP. If *mode*=1, then only the first instance of each unique SVP will be output, even through multiple files referenced through a datalist structure. If *mode*=2, then all SVPs will be output even if they are duplicates (equivalent to the **–D** option).

–O
By default, **mbsvplist** writes the SVP records to stdout. This option causes the program to instead write the SVPs to individual files with names FILE_XXX.svp, where FILE is the source swath data filename and XXX is the SVP count within the file.

–P
This option implies the output option **–O**. Additionally, this option sets the first SVP output for each swathfile to be used for recalculating the bathymetry in that swathfile by **mbprocess** by modifying the associated parameter file.

–S
This option causes **mbsvplist** to output the sound velocity values used for beamforming by the sonar (often called surface sound velocity, or SSV) instead of SVP profiles. Each SSV value will be paired with the corresponding sonar depth, and in general one depth-SSV pair will be output for each survey ping.

–V Normally, **mbsvplist** works "silently" without outputting anything to the stderr stream. If the **–V** flag is given, then **mblist** works in a "verbose" mode and outputs the program version being used and all error status messages.

–Z Normally, **mbsvplist** faithfully outputs the SVP data just as it is stored in the swath files. Rarely, sonars may store SVP data with a nonzero depth for the first sound speed value, a circumstance that causes problems with bathymetry recalculation using **mbprocess**. The **–Z** option causes **mbsvplist** to replace the first depth value with zero before outputting the SVP.

EXAMPLES

Suppose one wishes to obtain an SVP list from a Simrad EM300 data file in the MBARI format (MBIO id 57) called mbari_1998_107_msn.mb57. To obtain a listing to stdout, the following will suffice:

mbsvplist –F57 –I mbari_1998_526_msn.mb57 –V

The output will be as follows:

```
Program mbsvplist
Version $Id: mbsvplist.ps 2191 2014-06-05 00:59:01Z caress $
MB-system Version 5.0

Searching mbari_1998_526_msn.mb57 for SVP records
Outputting SVP to file:
## Water Sound Velocity Profile (SVP)
## Output by Program mbsvplist
## Program Version $Id: mbsvplist.ps 2191 2014-06-05 00:59:01Z caress $
## MB-System Version 5.0.alpha01
## Run by user <caress> on cpu <menard> at <Thu Jan  4 13:36:44 2001>
```

```
## Swath File: mbari_1998_526_msn.mb57
## Start Time: 1998/05/02 01:33:08.300000
## SVP Count: 1
## Number of SVP Points: 15
    0.00       1503.50
    9.99       1502.70
   19.98       1501.80
   30.00       1501.40
   39.99       1501.40
   49.98       1499.90
   60.00       1499.80
   69.99       1497.50
   79.98       1496.90
   90.00       1496.90
   99.99       1495.10
  198.99       1486.60
  498.99       1480.60
 1000.98       1481.90
 1830.00       1488.70
##
##
4 SVP records read
1 SVP records written
```

Total 4 SVP records read Total 1 SVP records written

SEE ALSO

mbsystem(1), **mbprocess**(1), **mbsvpselect**(1)

BUGS

Probably.