
Subject: Re: Vertical profiles

Posted by [dogru](#) on Tue, 08 Mar 1994 04:35:19 GMT

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In <19574.9403041804@sgsscsc2> sgsmatpa@reading.ac.uk (sgsmatpa) writes:

> Hello!

> Another plea for help here.

> I have some oceanographic data that I would like to display

> using Pvwave but I'm not having much success. The data basically

> consists of a series of almost parallel, vertical slices

> through the ocean :-

> ... [picture deleted.]

> Data is in the form of x, y, z, temperature. I want to be able to display

> the 3D data and rotate it around the z axis to look from different angles

> and to contour or shade the surface with the temperature values. Later

> on I want to interpolate the data to give a full 3D volume but that's a

> different problem!

> SHADE_SURF doesn't seem to be able to cope with this kind of 'vertical'

> surface. I can cheat and map longitude to z and depth to y but this

> means I can't rotate the data around the depth axis.

> Any suggestions as to alternative ways of displaying it? Can I convert it

> to a volume and make most of the volume transparent except where I have

> data points? And if I do that can I still display axis etc?

I faced this same problem a short while ago. The trick lies in using the IDL routines TRIANGULATE and TRIGRID. The first routine converts the given points to a set of triangles in the space.

The second routine then takes this set and maps them to a volume.

If, for example, x, y, and z are each vectors of size N, you can obtain the (equivalent) 3xN set of triangles by

```
TRIANGULATE, x, y, triangles
```

The variable 'triangles' will hold the set of triangles, which you can use in TRIGRID to obtain a volume (or, a 2D array accepted by SURFACE and SHADE_SURF) of 51x51, which is the default:

```
vol=TRIGRID(x, y, z, triangles)
SHADE_SURF, vol
```

> Also is there a 'null' value for data points (e.g. -9999.000) ?

Yes, one of the above routines accepts a keyword that lets you change the default for the missing values. Usually, zero works much better, however, if you later wish to plot the graph.

A couple minor annoyances: Even replacing the null values with zeros resulted in graphs that the users did not want to see. And second, after the above transformations, you lose the actual axis ranges of your data. Mail me or post if you want more info.

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> Help! All advice very welcome.

> thanks
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