Subject: Problem with suppression of dimension
Posted by jeyadev on Thu, 14 Dec 2000 00:25:50 GMT
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This may be a FAQ candidate, but I cannot find anything in the PV-Wave
manuals or in David's (fine) book.

I am having problem with the following code fragment:

```
......
......

nsteps = 5
  npts = 1    ; number of data points within each layer
 ncols = 5

dpt = {fullrow, cood:fltarr(4), colcode: ''}
fulldata = replicate(dpt, nsteps*npts*ncols)

avdata = fltarr(4,nsteps*ncols)

for i = 0,nsteps*ncols-1 do begin
    j = i*npts
    for k = 0,3 do avdata(k,i) = avg(fulldata(j:j+npts-1).cood(k))
    print, Format="(4(4x,f8.4), 5x, a1)", avdata(*, i),  cols(i/nsteps)
endfor

........
........
```

This basic job of the code is to take a 2-d array of dimensions
(4, nsteps*npts*ncols) and then reduce this dataset to a another
2-d array of dimensions (4,nsteps*ncols) by averaging over blocks
of 'npts' rows. (For arcane reasons, the 'colcode' variable is
present in every row of the raw matrix and hence the structure.)

This works fine for npts > 1 (that is the usual case and I have
been using the procedure for a while), but if, as I now need,
npts = 1, I get an error from the AVG procedure as the argument
being passed is not an array:

```
    Variable must be an array, name= ARRAY, routine AVG.
```

Now for some trouble shooting ....

With i = j = 0 and setting k = 0, for example

```
   WAVE> i = 0 & j = 0
```

```
WAVE> avdata = fltarr(4,nsteps*ncols)
WAVE> k = 0
WAVE> info, fulldata(j:j+npts-1).cood(k)
<Expression>    FLOAT     =       28.3790
```

On the other hand with npts = 2, the same gives

```
WAVE> npts = 2
WAVE> info, fulldata(j:j+npts-1).cood(k)
<Expression>    FLOAT     = Array(2)
```

So the question is, how do I force the float to be an array of length 1 when npts = 1?

I would like to avoid using an

```
if(npts eq 1)then avdata = fulldata.cood(0:2) else ....
```

if I can.

I seem to remember reading about this issue of avoiding the suppression of trailing degenerate dimesions, but I cannot find it in my private hints database (collected from this NG), online anywhere, in the manual and not even in David's superb tome.

Any pointers will be appreciated.

I am using PV-WAVE CL Version 6.01 (sun4 solaris sparc).

Needless to add, if there is a completely different way of accomplishing the row-wise averaging, I will gladly throw my method in the dustbin. :-)

thanks

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