
Subject: multi-dimensions in IDL

Posted by [kathryn.barker](#) on Mon, 13 Feb 2006 13:22:40 GMT

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I am trying to program using a 4-dimensional array. I have data for an array of [201,16,16,6]. I need to write out text files for combinations of 16 and 16. Each output file should be an array [201, 6]. I am supposed to obtain 1536 output files (without any redundant data) from these dimensions, does anyone have any idea how to do this? Unusually for me the programming is not the problem, just the combinations! Thanks.

I have got this far with the code:

```
pro LUT_Interpolate
```

```
COMMON sh_geo, eo_geo ;Common block, with sh_geo the common name shared with
```

```
                ;read_eo and eo_geo being the LUT we want to use in this program.
```

```
dep=201
```

```
wl=fltarr(6)                ;to define names of the columns (wavelengths) as an array  
wl=[412, 440, 490, 510, 555, 670] ;naming the columns as they are
```

```
wl_i=fltarr(6)              ;to define the names of the column of the enw wavelengths  
wl_i=[410, 462, 514, 566, 618, 670] ;naming the new wavebands
```

```
outp=fltarr(201,16,16,6,1) ;defining output array
```

```
for i=0,200 do begin        ;for depth first  
  for j=0,15 do begin      ;for absorbance  
    for k=0,15 do begin    ;for scattering
```

```
      tempE0=eo_geo(i,j,k,0:5,5) ;rewriting eo-geo to a temp file  
so as not to spoil original eo-geo
```

```
      tmpE0=reform(tempE0)  
      tmpE0_i=interpol(tmpE0,wl,wl_i) ;interpolating the irregular grid of reformed data to  
      generate new lambda
```

```
      tmpE0_i(0)=tmpE0(0) ;1st cell of the interpolated values to be replaced by the 1st
```

```
      data.                ;cell of the original
```

```

        outp(i,j,k,*)=tmpE0_i    ;output array of interpolated
values defined

        endfor
        endfor
    endfor

for i=0,15 do begin            ;i = abs
    for j=0,15 do begin        ;j = scat
        tempoutput=fltarr(201,6) ;the output size (1 column of
201)
                                ; adding in that we need to write
out for
                                ;all lamda, and not just 1 lamda
at a time.
        tempoutput=outp(*,i,j,*) ;filling the files with all
dpeths and Eo for each combinations of a,b,lamda
                                ; now we are writing out for each
combination
                                ;of a, b at all depths and all
lamda.

        tempoutput=reform(tempoutput) ;as above

        tmpfn=strcompress(dirstem+'Eo_a'+string(i)+'_b'+string(j)+' .txt',/remove_all)
                                ;thus delineating
combination.

        openw,20,tmpfn
        printf,20,tempoutput,FORMAT='(6(f))' ;printed formatted data
to the file.
        close,20

        endfor
    endfor

end

```
