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 shoud 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)        ;Ist cell of the interpolated
values to be replaced by the 1st
                                   ;cell of the original
data.
```

```
          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
```