Subject: Interpolate whole array instead of looping through elements
Posted by liam.steele on Tue, 11 Apr 2017 16:18:27 GMT
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Hi all,

I have a 4D array (say temperatures) ordered as temp[nlat,nlon,nlev,ntime], where the elements are the number of latitudes, longitudes, vertical levels and times. What I want to do is interpolate the lat/lon data to a specified point or points, but for each level and time. So, at the moment my code would look like:

```
out_vals = fltarr(nlev, ntime)
for i = 0, ntime-1 do begin
  for j = 0, nlev-1 do begin
    out_vals[j,i] = bilinear(temp[*,*,j,i],ival,jval)
  endfor
endfor
```

where ival and jval are the points I want to interpolate to. However, there are lots of levels and times, and so the loop procedure can take a while.

Is there any method where one or both of the loops can be removed, and the interpolation can be carried out on the entire array (i.e. on the time and level dimensions at the same time)? I've tried to think of a quicker method, but I'm stumped.

Many thanks,

Liam