Subject: Re: Point Observations from NARR output
Posted by B.J. Baule on Thu, 07 Apr 2011 20:31:36 GMT
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On Apr 7, 3:25 pm, "B.J. Baule" <guitarplayer_...@comcast.net> wrote:
> Hello all,
>
> This is probably a really simple problem however my inexperience
> with IDL has left me baffled. I'm relatively new to IDL programming
> and have a question regarding getting grid point values from NARR
> reanalysis output. I can get the data to open, read in, and make a
> map. However, I would like to get point observations from the
> reanalysis data set (Ex. July Temperature for Barrow, AK Lat:
> 71.2905556 Lon:-156.7886111).
>
> The three variables that I've pulled from the netCDF file file are
> air temp (air), latitude, longitude. With the HELP function in IDL, I
> find that the dimensions of the arrays are: air = ARRAY[349, 277, 12],
> rlats = ARRAY[349,277], rlons = ARRAY[349,277]. As I understand it,
> the Lambert Conformal Conic Grid is a 349x277 grid. It has been
> suggested to me that I should be working in x y coordinates. When I
> try and pull x and y from the netcdf file, I get arrays but they are
> both 277 element single dimension arrays. I'd expected the x array to
> be 349 elements and y to be 277 elements. If I could get a 349 element
> x array and a 277 element y array, then maybe I could use
> MAP_PROJ_INVERSE to get lat lon values for these grid points?
>
> Sorry if this is an elementary question that has an easy solution
> that I'm overlooking. Does anyone have experience doing this? Any help
> would be greatly appreciated.
>
> Thanks,
> B.J.
>
> (I've attached a copy of the code I've tried to build, sorry about the
> lack of comments):
>
> PRO TRYIT_XY
>
> Compile_Opt defint32
> ;define number of latitudes/longitudes
> nlons=349
> nlats=277
>
> vararray2 = fltarr(nlons,nlats)
> vararray = fltarr(nlons,nlats,12)
> vararryin = fltarr(nlons,nlats)
> rlons = fltarr(nlons,nlats)

```
>  rlats  = fltarr(nlons,nlats)
>
>  ;Open file get variable id's
>  infile =  '/Users/snr-wbaule/Desktop/Reanalysis_Data/air.2m.mon.ltm.nc '
>  nunit = ncdf_open(infile,/nowrite)
>  ivarid   = ncdf_varid(nunit,'air')
>  ilatid   = ncdf_varid(nunit,'y')
>  ilonid   = ncdf_varid(nunit,'x')
>
>  ;Get scale and offset attributes from netCDF file
>  NCDF_ATTGET,nunit,'air','add_offset', add_offset
>  NCDF_ATTGET,nunit,'air','scale_factor',xscale
>
>  ; apply offset and scale factor to air temp data for all months
>  for itime = 0,11,1 do begin
>    offset   = [0,0,itime]
>    count    = [nlons,nlats,1]
>
>    ncdf_varget,nunit,ivarid,temp, OFFSET=offset
>    vararray[*,*,itime] = vararray2 + (xscale*FLOAT(temp)) + add_offset
>
>  endfor
>  ; get lat and lon arrays from file
>  ncdf_varget,nunit,ilatid,rlats,OFFSET=[0,0],$
>    count = [nlons,nlats]
>  ncdf_varget,nunit,ilonid,rlons,OFFSET=[0,0],$
>    count = [nlons,nlats]
>
>  HELP, vararray ,rlats, rlons
>
>   ;reproject data with parameters found in netCDF file
>  result = MAP_PROJ_INIT(104, CENTER_LATITUDE=0,
>  CENTER_LONGITUDE=-107,STANDARD_PAR1=50.0,$
>   STANDARD_PAR2=50.0, DATUM=8, /GCTP, LIMIT=[12.2, -133.5, 54.5, -152.,
>  57.3, -49.4, 14.3,-65.1]); FALSE_EASTING=5632642.22547,
>  FALSE_NORTHING=4612545.65137)
>  ;convert to x y
>  result2 = MAP_PROJ_FORWARD(rlons, rlats, MAP_STRUCTURE=result)
>  ;convert x y to lat lon to check values.
>  result3 = MAP_PROJ_INVERSE(result2, MAP_STRUCTURE=result)
>
>  END
```

Sorry: ilatid should be ilatid and ilonid should be
ilatid   = ncdf_varid(nunit,'lat')
ilonid   = ncdf_varid(nunit,'lon')