Subject: Separating land and ocean data in IDL
Posted by siumtesfai on Fri, 10 Jul 2015 19:33:22 GMT
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Hello all,

I have climate model output data in IDL sav file format and NCDF file.

Dimension of the data

Sz=size (DATA)

longitude= sz(1) : 0-360 degree
latitude = Sz(2) : -90S to 90N
pressure = Sz(3) : 1000hPa to 10hPa
time = Sz(4) : 1979 to 2005

The data is global. I can extract regions . For example , North america domain by restricting my longitude and latitude. That is easy. I would use "Where" command

E.g lat=where(latitude GE lat1 and latitude LT lat2)
lon =where(longitude GE lon1 and longitude LT lon2)

DATA1=data(lon,lat,*,*)

My question is how can you extract only data at the continental north america over land. I am not interested in analyzing data over the oceans (i.e North Pacific and Atlantic)

Waiting for your suggestion.

Thank you for you help

Best regards

Subject: Re: Separating land and ocean data in IDL
Posted by siumtesfai on Sat, 11 Jul 2015 05:47:17 GMT
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Hello all,

Any suggestion on my question . Please I need your help . If the question is not clear, please also let me know

Best regards

On Friday, July 10, 2015 at 3:33:25 PM UTC-4, siumt...@gmail.com wrote:
> Hello all,
>
> I have climate model output data in IDL sav file format and NCDF file.
>
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>
> Best regards

Subject: Re: Separating land and ocean data in IDL
Posted by shilosh on Sun, 12 Jul 2015 07:42:39 GMT
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Take a look at David Fanning's example here:
http://www.idlcoyote.com/map_tips/seamask.html#NEWTECHNIQUES

Shilo

Shilo Shiff
Department of Geography and Environment
Bar-Ilan University

Subject: Re: Separating land and ocean data in IDL
Posted by Phillip Bitzer on Mon, 13 Jul 2015 16:13:03 GMT
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On Saturday, July 11, 2015 at 12:47:21 AM UTC-5, siumt...@gmail.com wrote:
> Hello all,
>
> Any suggestion on my question . Please I need your help . If the question is not clear, please also let me know
>
> Best regards
>

Have you tried Google-ing to see if someone has some sort of example that might help you?

(It's out there! David's is a good place to start, but there are others.)

Subject: Re: Separating land and ocean data in IDL
Posted by siumtesfai on Thu, 16 Jul 2015 21:28:22 GMT
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On Friday, July 10, 2015 at 3:33:25 PM UTC-4, siumt...@gmail.com wrote:
> Hello all,
>
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> DATA1=data(lon,lat,*,*)
>
>
> My question is how can you extract only data at the continental north america over land. I am

not interested in analyzing data over the oceans (i.e North Pacific and Atlantic)
>
> Waiting for your suggestion.
>
> Thank you for you help
>
> Best regards

Thank you for your direction on my solution

I know now that there are functions to extract landmass only data

I have the following question though. Suppose you have surface data from ncep. Data= (144,73, 795)

```
restore,'ncep.sav'

sz=size(data)
lon=sz(1)
lat=sz(2)
time=sz(3)

Domain = extract_region( data,region='NAMERICA',  lon=lon, lat=lat )
land = LAND_MASK(  /NAMERICA,lat=lat,lon=lon,Limit=[-170,30,-50,75],resolution= [2.5,2.5])

end
```

I checked the dimension of the result

Domain= Array[49, 17, 795]

land = Array[48, 18]

So, I have mismatch in the array size from my domain and land .

Any suggestion on how to fix the problem

I should have both Domain and land to have the same array size in order to extract landmass data from original data as follow

```
landmass=fltarr(49,17,795)
FOR i=0,48 do begin
  FOR j=0,16 do begin
    x=reform(land(i,j))

    y=where(x GT 0 )
```

```
 if y(0) GE 0 then begin
   landmass(i,j,*)=Domain(i,j,*)
  endif else begin
   landmass(i,j,*)=1E20
   endelse
 ENDFOR
```

Best regards
