Subject: Hovmoller
Posted by tjc0010 on Thu, 24 Jul 2014 19:39:06 GMT
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I have been able to read in several NetCDF files, and now I am attempting to create Hovmoller diagrams, but cannot get the data to cooperate with me. The data is as follows:
temp=[2000,2000, 2]
lon=[2000,2000,2]
lat=[2000,2000,2]
time=[2]

Any suggestions on how to create these plots would be much appreciated.

Thanks

Subject: Re: Hovmoller
Posted by David Fanning on Fri, 25 Jul 2014 13:36:40 GMT
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tjc0010@uah.edu writes:

> I have been able to read in several NetCDF files, and now I am attempting to create Hovmoller diagrams, but cannot get the data to cooperate with me. The data is as follows:
> temp=[2000,2000, 2]
> lon=[2000,2000,2]
> lat=[2000,2000,2]
> time=[2]
>
> Any suggestions on how to create these plots would be much appreciated.

Movmoller plots are time vs latitude or time vs longitude plots. You
will have an EXTREMELY difficult time producing such plots with only two
time points! :-)

Are you sure this is what you want?

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: Hovmoller
Posted by tjc0010 on Fri, 25 Jul 2014 18:27:28 GMT
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On Friday, July 25, 2014 8:36:40 AM UTC-5, David Fanning wrote:
> tjc0010@uah.edu writes:
>
>
>
>> I have been able to read in several NetCDF files, and now I am attempting to create Hovmoller diagrams, but cannot get the data to cooperate with me. The data is as follows:
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> Cheers,
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> David
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>
>
> --
>
> David Fanning, Ph.D.

>
> Fanning Software Consulting, Inc.
>
> Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
>
> Sepore ma de ni thue. ("Perhaps thou speakest truth.")

When I use the WHERE function to limit the temperature values and use that index on over the time array I get an equal number of time and longitude values.

Subject: Re: Hovmoller
Posted by David Fanning on Fri, 25 Jul 2014 18:47:23 GMT
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tjc0010@uah.edu writes:

> When I use the WHERE function to limit the temperature values and use that index on over the time array I get an equal number of time and longitude values.

Well, then you are doing it wrong. :-)

Believe me, you only have two temperature values in this file. Print out
your time array.

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: Hovmoller
Posted by tjc0010 on Fri, 25 Jul 2014 19:41:17 GMT
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On Friday, July 25, 2014 1:47:23 PM UTC-5, David Fanning wrote:
> tjc0010@uah.edu writes:
>
>
>
>> When I use the WHERE function to limit the temperature values and use that index on over the time array I get an equal number of time and longitude values.
>

>
>
> Well, then you are doing it wrong. :-)
>
>
>
> Believe me, you only have two temperature values in this file. Print out
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> your time array.
>
>
>
> Cheers,
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>
>
> David
>
> --
>
> David Fanning, Ph.D.
>
> Fanning Software Consulting, Inc.
>
> Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
>
> Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Here is my time array after I read in 2 files:

TIME FLOAT = Array[2]

Then I try to find where the temps are less than 220:
 IND=WHERE(temp LE 220, count)
temp=temp[IND]
help, temp
TEMP FLOAT = Array[205967]

Subject: Re: Hovmoller
Posted by David Fanning on Fri, 25 Jul 2014 20:20:15 GMT
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tjc0010@uah.edu writes:

> Here is my time array after I read in 2 files:
>
> TIME FLOAT = Array[2]

>
> Then I try to find where the temps are less than 220:
> IND=WHERE(temp LE 220, count)
> temp=temp[IND]
> help, temp
> TEMP FLOAT = Array[205967]

Yes, but I'm not sure why you are telling me this. A Hovmoller plot is a plot of temperature with longitude (or latitude) along one axis and time along the other. You have two time points. What do you expect the "plot" to look like?

If I were you, I would just contour the two temperature "images" you have next to each other and label them with the two times you have. You will have the advantage that people will understand what you are showing. :-)

Cheers,

David
--
David Fanning, Ph.D.
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Sepore ma de ni thue. ("Perhaps thou speakest truth.")

Subject: Re: Hovmoller
Posted by tjc0010 on Fri, 25 Jul 2014 20:22:37 GMT
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On Thursday, July 24, 2014 2:39:06 PM UTC-5, tjc...@uah.edu wrote:
> I have been able to read in several NetCDF files, and now I am attempting to create Hovmoller diagrams, but cannot get the data to cooperate with me. The data is as follows:
>
> temp=[2000,2000, 2]
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> lat=[2000,2000,2]
>
> time=[2]
>
>
>
> Any suggestions on how to create these plots would be much appreciated.
>
>

>
> Thanks

Well I have about 20 files and will want to show eastward propagation with time

---

Subject: Re: Hovmoller
Posted by David Fanning on Fri, 25 Jul 2014 20:49:02 GMT
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tjc0010@uah.edu writes:

> Well I have about 20 files and will want to show eastward propagation with time

Ah, so you have more than one file. As Wesley says in the Princess Bride, "Why didn't you mention the wheelbarrow among our assets the first time?"

Presumably these files contain data points at different times. Perhaps you have 20 such times. Now we are getting somewhere!

What you have to do is build up a 2D array by selecting for longitude and saving the temperatures at those longitudes.

```
 ntimes = 20

 ; Read the first file, just to see how big array has to be.
  ... read the data file, extract variables, etc.
 lonIndices = where(lons gt -25 and lons lt 40)

 ; Temperature at longitude and time
 data = FltArr(N_Elements(lonIndices), ntimes)
 temps = temps[lonIndices]
 times = FltArr(ntimes)

 ; Read the files in a loop and extract info for Hovmoller plot.
 for j=0,19 DO BEGIN
     ... Read file, extract variables, etc.
     times = time[0]
     data[*,j] = temps[lonIndices]
 endfor
```

Now, make your plot...

```
  cgContour, data, times, lons[lonIndices], ... ; Hovmoller plot
```

Cheers,

David
--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
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Subject: Re: Hovmoller
Posted by tjc0010 on Mon, 28 Jul 2014 19:41:36 GMT
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On Thursday, July 24, 2014 2:39:06 PM UTC-5, tjc...@uah.edu wrote:
> I have been able to read in several NetCDF files, and now I am attempting to create Hovmoller diagrams, but cannot get the data to cooperate with me. The data is as follows:
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>
> lat=[2000,2000,2]
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> time=[2]
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>
>
> Any suggestions on how to create these plots would be much appreciated.
>
>
>
> Thanks

Thanks David

Subject: Re: Hovmoller
Posted by laura.hike on Wed, 27 Dec 2017 20:30:02 GMT
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No disrespect intended, but what if we want to make said plot without using Coyote graphics?

On Friday, July 25, 2014 at 1:49:02 PM UTC-7, David Fanning wrote:
> tjc0010@uah.edu writes:
>
>> Well I have about 20 files and will want to show eastward propagation with time
>

> Ah, so you have more than one file. As Wesley says in the Princess
> Bride, "Why didn't you mention the wheelbarrow among our assets the
> first time?"
>
> Presumably these files contain data points at different times. Perhaps
> you have 20 such times. Now we are getting somewhere!
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> What you have to do is build up a 2D array by selecting for longitude
> and saving the temperatures at those longitudes.
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> ntimes = 20
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> ; Read the files in a loop and extract info for Hovmoller plot.
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> Now, make your plot...
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Subject: Re: Hovmoller
Posted by Jim Pendleton on Thu, 28 Dec 2017 02:52:42 GMT
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On Wednesday, December 27, 2017 at 1:30:05 PM UTC-7, laura...@gmail.com wrote:
> No disrespect intended, but what if we want to make said plot without using Coyote graphics?

>
>
> On Friday, July 25, 2014 at 1:49:02 PM UTC-7, David Fanning wrote:
>> tjc0010@uah.edu writes:
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>> Sepore ma de ni thue. ("Perhaps thou speakest truth.")

IDL has a built-in CONTOUR function that doesn't rely on the David's Coyote library.

https://www.harrisgeospatial.com/docs/contour.html

Subject: Re: Hovmoller
Posted by laura.hike on Fri, 29 Dec 2017 22:22:19 GMT
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On Wednesday, December 27, 2017 at 6:52:46 PM UTC-8, Jim P wrote:
> On Wednesday, December 27, 2017 at 1:30:05 PM UTC-7, laura...@gmail.com wrote:
>> No disrespect intended, but what if we want to make said plot without using Coyote graphics?
>>
>>
>> On Friday, July 25, 2014 at 1:49:02 PM UTC-7, David Fanning wrote:
>>> tjc0010@uah.edu writes:
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>
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>
> https://www.harrisgeospatial.com/docs/contour.html

I don't think contour is what I want. Doesn't it always filter/interpolate the data? Maybe "image" will do.
