
Subject: Reading various HDF files

Posted by [Nicola](#) on Wed, 09 Nov 2005 10:02:21 GMT

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Hi all

I'm facing this problem which deal I think to memory problem.

I've the output of numerical simulations which are saved in HDF format.

I've outputs every, lets say 10 time step, which means that I've around 1000 HDF file each of them containig 8 fields which have dimension (64,128,8, dimension on x,y,z direction. It's a cubic domain simulation).

Now I want to create a movie of the evolution of one field, let's say.

I choose one of the field of HDF file let's call it field and I choose one particular plane on z, let's say I want the evolution of field[:,*,8] as a function of time showing it as a movie.

Is there a good way to do this whitout a for loop for reading all the files and than saving the only field which I need?

I hope I've been sufficiently clear.

Thanks for all the answer

n

Subject: Re: Reading various HDF files

Posted by [Nicola](#) on Wed, 09 Nov 2005 14:41:25 GMT

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I really thank you Peter. I will try all the suggestions

Subject: Re: Reading various HDF files

Posted by [Nicola](#) on Thu, 10 Nov 2005 11:07:56 GMT

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Still some problem hopefully you can help me.

Each of the field has dimension of the kind (64,128) or (128,256) or (256,512) or something like this. Using the suggestion that Peter gave me the image is not display in the entire window but only occupy a part of the window itself (obviously the window is larger than the image). I tried to work with position, xsize and ysize keyword of tv (or better of tvscl) but I did not manage to let the image occupy all the graphic window. Any suggestion?

thank a lot

Subject: Re: Reading various HDF files

Posted by peter.albert@gmx.de on Thu, 10 Nov 2005 11:51:11 GMT

Hi Nicola,

did you ever try the XSIZE and YSIZE keywords with WINDOW?

And if a window of size 64, 128 seems to be too small, you might also want to use CONGRID. Or you give TVIM a try.

(<http://www.astro.washington.edu/deutsch-bin/getpro/library28.html?TVIM>)

Cheers,

Peter

Nicola schrieb:

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- > (256,512) or something like this. Using the suggestion that Peter gave
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- > of tvscl) but I did not manage to let the image occupy all the graphic
- > window. Any suggestion?
- > thank a lot

Subject: Re: Reading various HDF files

Posted by [Nicola](#) on Thu, 10 Nov 2005 14:02:17 GMT

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Here I am again, hoping not to be too boring. I've tried tvim and it worked fine for me. The only question that I'd like to now if is there any possibility to make the same think not interactively but through a batch file. I do not want to occupy the cpu of my server with this kind of stuff but just want to make it not interactively. I generally to this by creating an IDL programs and then use on linux the at command with low priority. The problem is that in this way no interactive xwindowing and consequently tv or tvim fails.... maybe some of you have some ideas

Subject: Re: Reading various HDF files

Posted by peter.albert@gmx.de on Thu, 10 Nov 2005 15:58:42 GMT

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I am not sure what you mean with interactive or not interactive respectively. I don't see where user interaction is necessary in the

above steps. If your problem has to do with X-forwarding or crashing WINDOW commands, then you could use e.g. an ssh connection with X-forwarding, e.g. with ssh -X ... If you then use the PIXMAP keyword to WINDOW, you won't even get bothered by the windows appearing on your screen. Another option might be using the Z-Buffer, but I just heard vague rumours and never used it myself.

Cheers,

Peter

Subject: Re: Reading various HDF files

Posted by [David Fanning](#) on Thu, 10 Nov 2005 16:39:06 GMT

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Nicola writes:

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> worked fine for me. The only question that I'd like to now is there
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> this by creating an IDL programs and then use on linux the at command
> with low priority. The problem is that in this way no interactive
> xwindowing and consequently tv or tvim fails....
> maybe some of you have some ideas

Why don't you use the IMAGE keyword to MPEG_PUT instead of the WINDOW keyword. The former loads the frame directly with an image, whereas the latter takes a copy of the current graphics window as the image it loads. Be sure you BYTSCALE your image as you put it into the MPEG object. That way you have no need of a window or a TV substitute command (TVIMAGE, IMGDISP, PLOTIMAGE, etc.)

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Subject: Re: Reading various HDF files

Posted by [Nicola](#) on Thu, 10 Nov 2005 17:31:15 GMT

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Maybe the problem is in my `idl_startup` which in some sense make me crash windowing during batch file. Indeed in my startup file I've something like this

```
if (!version.os_family eq 'unix') then device,true_color=24
window,/free,/pixmap,colors=-10
wdelete,!d.window
device,retain=2,decompose=0
device,get_visual_depth=depth
```

maybe this is the cause of failure during non-interactive session (with no-interactive I mean with no X-windowing or with `idl` programs launched in batch with `at` command)
sorry for boring you guy and thank you for your help

Subject: Re: Reading various HDF files

Posted by [Nicola](#) on Fri, 11 Nov 2005 11:35:38 GMT

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Thank you rick, maybe this will be the faster way avoiding mpeg problems on IDL. Could you suggest me which encoder can I use considering the fact that I would like to have a 24-bit animation.
thanks a lot to all of you

Subject: Re: Reading various HDF files

Posted by [R.Bauer](#) on Sat, 12 Nov 2005 07:56:01 GMT

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Rick Towler wrote:

```
> I don't want to complicate things but forget about MPEG. MPEG is most
> often a lousy format for scientific animations. I would suggest writing
> all of your frames to disk as individual .png files then using another
> program to create the animation.
>
> For 8-bit animations, it's tough to beat the FLI/FLC format. Rich
> Signell has a page with all you need to know to get started with FLI/FLC
> format at: http://woodshole.er.usgs.gov/operations/modeling/flc.html
```

Hi Rick

thanks for this link. I still have searched a while ago for something like

this. This is perfect for us because I have decided in the past to use color_quan for our idl anim files to translate 24bit to 8bit.

cheers
Reimar

>
> For 24-bit animations it is a bit more complicated as there are a number
> of encoder/decoders out there. I would be happy to advise further if
> you want to go this route.
>
> If you just want to stick with MPEG, understand that most MPEG players
> only support certain frame sizes and bit rates so to ensure
> compatibility you need to stick to them. For frames sizes, I would
> stick with D1 (704x480 or 720x480), half D1 (352x480), and quarter D1
> (352x240). MPEG-2 will give you better overall quality vs file size but
> not all media players play MPEG-2 content (for example, Windows Media
> Player requires a special plug-in). MPEG-1 is widely compatible but you
> are limited in maximum bit-rate (1856 kbps) and quality vs file size
> isn't as good as MPEG-2.
>
> -Rick
>
> Nicola wrote:
>> Actually for the moment I've tried only to read each sds and then to
>> extract the let's call 0-zplane. I did not tried for the moment start
>> and count which will be me reading just one plane and so I can divided
>> for 8 the computational time. I will try..and also I will try mpeg_put
>> (although I was not succesfully in creating mpeg file with IDL up to
>> now :-()
>> thank's a lot
>> n
>>

Subject: Re: Reading various HDF files
Posted by [Rick Towler](#) on Mon, 14 Nov 2005 23:42:48 GMT
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Nicola wrote:
> Thank you rick, maybe this will be the faster way avoiding mpeg
> problems on IDL. Could you suggest me which encoder can I use
> considering the fact that I would like to have a 24-bit animation.
> thanks a lot to all of you

Well, I don't know about faster :(You'll inevitably spend time
learning new software and experimenting with encoding. But in the end
you should have higher quality and smaller animations :)

If you only require Mac and windows support I would recommend:

VP3 encoder - free, info at <http://www.vp3.com/> The binaries hosted at xiph.org seem to be offline. Don't know the status of the project. This codec works with videomach.

Divx - \$20 from www.divx.com. A popular encoder for video bootleggers, I have had quite good luck with it using it for scientific animations. This codec works with videomach. The decoder is also available for linux, but the version lags a bit behind the windows and mac ports.

Sorenson codecs (v4 and v5) - These codecs ship with Quicktime Pro (www.quicktime.com ~\$20 for the windows version). This codec *doesn't* work with videomach. You can use videomach to create an uncompressed .avi which you can then encode using quicktime pro. The upside is that many people have quicktime installed on their PCs.

Windows Media - The windows media *encoder* is available free: <http://www.microsoft.com/windows/windowsmedia/9series/encoder/default.aspx> Like the sorenson codecs, this encoder doesn't provide a Video for windows (VFW) interface and thus it can't be used directly with videomach. You would need to create uncompressed .avi files and encode using the WME software. The upside with WM is that anyone with windows media player 9+ installed can view the files. Further, if they have windows media 7 installed and an internet connection the WM9 decoder will be downloaded automatically.

Remember that you need the codec installed on any machine you want to view the animation on. This includes laptops at conferences. Make sure you test before you stand up at the podium!

I'll also recommend aviIDL from Ronn Kling's website (<http://www.kilvarock.com/>) which provides an interface to the video for windows API from IDL. Using this package you can use any VFW codec and go straight from IDL to your animation. No videomach required.

Good luck!

-Rick

Subject: Re: Reading various HDF files
Posted by [R.Bauer](#) on Fri, 18 Nov 2005 10:19:51 GMT

Dear Rick

there is newer version here and I tested it with digital photos and it works!

<http://vento.pi.tu-berlin.de/fli.html>

It would need some more work on utf-8 file names but principle it works with true color images too.

cheers
Reimar

Rick Towler wrote:

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> Nicola wrote:
>
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>
> Good luck!
>
> -Rick

--

Reimar Bauer

Institut fuer Stratosphaerische Chemie (ICG-I)
Forschungszentrum Juelich
email: R.Bauer@fz-juelich.de

a IDL library at Forschungszentrum Juelich
http://www.fz-juelich.de/icg/icg-i/idl_icglib/idl_lib_intro.html
=====

Subject: Re: Reading various HDF files
Posted by [R.Bauer](#) on Fri, 18 Nov 2005 10:25:17 GMT
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I see it does depend on the kind of photos I tried

Reimar Bauer wrote:

> Dear Rick
>

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> works!
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--

Reimar Bauer

Institut fuer Stratosphaerische Chemie (ICG-I)
Forschungszentrum Juelich
email: R.Bauer@fz-juelich.de

a IDL library at ForschungsZentrum Juelich
http://www.fz-juelich.de/icg/icg-i/idl_icglib/idl_lib_intro.html
=====

Subject: Re: Reading various HDF files
Posted by [R.Bauer](#) on Fri, 18 Nov 2005 21:03:06 GMT
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Hi Rick,

perhaps you like to know I have added this format for sequences
to the MoinMoin wiki engine <http://moinmoin.wikiwikiweb.de>

to my Gallery2 parser

<http://moinmoin.wikiwikiweb.de/ParserMarket/Gallery2>

It's not idl but we often use this to show idl images to the world.
And by now we could show them in fli format animations too.

cheers
Reimar

Rick Towler wrote:

```
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