Subject: Animation
Posted by Neil Winrow on Tue, 19 Aug 1997 07:00:00 GMT
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Can anyone give me any advice?
I am trying to Animate a set of surface plots. Each surface plot
represents the output from a data file. The set of plots represent flux
at different photon energy, and my boss would like a small animation as
the photon energies increase. I can read each of the data files into the
program to display individually, but how can I animate the sequence,
using the XINTERANIMATE etc. Any advice would be greatly appreicated.

Many Thanks

Neil

Subject: Re: animation
Posted by David Fanning on Mon, 23 Aug 2004 17:23:50 GMT
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Mary T writes:

> I would like to animage the images that I get as an output in IDL
> windows. I saw an example in "IDL programming techniques" by Dr.
> Fanning (2 edition,page 105). However, from my understanding, this
> example is for images that are in a database called "head". My
> question is...how can I modify it, so that the images that I have in
> the output windows, be included in this code? I guess I have to save
> these output images first...in what format showld I do this?
>
> Kind regards,
> Mary
>
>
>
> XInterAnimate, Set=[800,800,50],/Showload
> yellow=GetColor('yellow',!D.Table_Size-2)
> LoadCT,3,Ncolors=!D.Table_Size-2
> For j=0,50 DO BEGIN
> TVImage, BytScl(head[*,*,j],Top=!D.Table_Size-3)
> XYOuts,0.1,0.1,/Normal,StrTrim(j,2),Color=yellow
> XInteranimate,Frame=j,Window=!D.Window
> ENDFOR
> XInteranimate,50
> end

In the FOR loop above, take out the TVIMAGE command

and substitute whatever command or commands you use
to put something into the display window. Whatever
you put into the window will be animated.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: animation
Posted by David Fanning on Mon, 23 Aug 2004 17:38:11 GMT
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Mary T writes:

> I would like to animage the images that I get as an output in IDL
> windows. I saw an example in "IDL programming techniques" by Dr.
> Fanning (2 edition,page 105). However, from my understanding, this
> example is for images that are in a database called "head". My
> question is...how can I modify it, so that the images that I have in
> the output windows, be included in this code? I guess I have to save
> these output images first...in what format showld I do this?

It occurs to me that I could be more helpful. :-)

Where do the images you want to animate exist
at the time you want to animate them? Are they
in memory as variables? Did you display then someplace?
Are they in individual display windows? Or are all the
images in one window? How did you put them in the window?

If you have to copy them from some other display window
to the animation window, then the "DEVICE COPY"
technique is probably what you want to use.

None of this *has* to be done in a FOR loop, of course,
it is just easier this way. For example, if you wanted
to animate five images, and they were already displayed
in windows 1, 4, 10, 38 and 52 and these windows were
all the same size as your animation window (say 400 by 500),
then you could do this:

```
XInterAnimate, Set=[400,500,5],/Showload
```

XInteranimate,Frame=0,Window=1
XInteranimate,Frame=1,Window=4
XInteranimate,Frame=2,Window=10
XInteranimate,Frame=3,Window=38
XInteranimate,Frame=4,Window=52
XInteranimate,50

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: animation
Posted by mary2747102 on Tue, 24 Aug 2004 00:16:17 GMT
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Wow! Thank you very much...by the way...I have found your book as a very nice tool to learn!

I have more questions for you, if you don't mind...

1. I think I will need the loop to get the output images and insert them in the animation. The output images are produced from the flow3 procedure.
Here is the code that I have been writting, but I don't know why it does not run at all, and it also does not show any error message. (note:I have the flow3.pro, the data files and my code in the same folder.)

2. I would love to have an output window as the result that show in one of your procedures: fsc_surface. Meaning, that I could be able to rotate and zoom in the image. However, this is not a surface! Do you have any procedure that could do this for my images? This will be nicer than drawing a 3-D cube by myself. I tried the zoom command but it does not look nice either. And I tried the rotate keywords, but I have to change them every time and sort of guessing the angles....

This message was long! Sorry for the inconvenience, and I thank you very much in advance if you can give me some advice, expert!

Kind regards,

Mary T.

```
;there are several files that contain velocity results at different
number of iterations.  The purpose of the animation is to show how the
vectors look at different number of iterations:

Filename=Dialog_Pickfile(filter='*.out',/read,/multiple)

For j=0,numFiles-1 DO BEGIN
 openR,lun,Files[j],/Get_Lun
 A=fltarr(7,49L*49L*5L)          ;create arrays to hold data in files
 ReadU,lun,data
 Free_Lun,lun

;create 3 dimensional arrays to hold vector data.
;the indices will be Velocity(x,y,z)

 U=fltarr(49L,49L,5L)
 V=fltarr(49L,49L,5L)
 W=fltarr(49L,49L,5L)


  For i = 0L, 12004L Do Begin


       U(A(0,i)-1,A(1,i)-1,A(2,i)-1) = A(3,i)

       V(A(0,i)-1,A(1,i)-1,A(2,i)-1) = A(4,i)

       W(A(0,i)-1,A(1,i)-1,A(2,i)-1) = A(5,i)


  Endfor

 window,j,XSIZE=400, YSIZE=500, TITLE='IDLgrWindow[j]'


 Scale3, xr=[0,50],yr=[0,50],zr=[50,0],AX=50, AZ=50
 Flow3, Vx, Vy, Vz,$
         SX=posx,SY=posy,SZ=posz, $
         ARROWSIZE=.0100

 ;plots a cubical shape, vectors should appear inside this cube

 PLOTS, [0,50], [0,0], [0,0], /T3D,color=200,line=9
 PLOTS, [0,0], [0,50], [0,0], /T3D,color=200,line=9
 PLOTS, [0,0], [0,0], [0,32], /T3D,color=200
 PLOTS, [0,50], [0,0], [32,32], /T3D,color=200
```

```
PLOTS, [0,50], [50,50], [32,32], /T3D,color=200
PLOTS, [0,0], [50,50], [32,0], /T3D,color=200
PLOTS, [50,50], [50,0], [0,0], /T3D,color=200
PLOTS, [50,0], [50,50], [0,0], /T3D,color=200
PLOTS, [50,50], [50,50], [0,32], /T3D,color=200
PLOTS, [50,50], [0,0], [32,0], /T3D,color=200
PLOTS, [50,50], [50,0], [32,32], /T3D,color=200
PLOTS, [50,50], [50,0], [32,32], /T3D,color=200
PLOTS, [0,0], [0,50], [32,32], /T3D,color=200



  XInterAnimate, Set=[400,500,3],/Showload
  XInteranimate,Frame=j,Window=j
  XInteranimate,50

Endfor
End
```

Subject: Re: animation
Posted by David Fanning on Tue, 24 Aug 2004 02:13:16 GMT
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Mary T writes:

> I have more questions for you, if you don't mind...
>
> 1. I think I will need the loop to get the output images and insert
> them in the animation. The output images are produced from the flow3
> procedure.

Sigh...

Take the first XInteranimate command and put it *before*
the loop. And make the number of frames equal to the
number of files you have:

```
  XInterAnimate, Set=[400,500,numFiles],/Showload
```

Take the last XInteranimate command and put it *after*
the loop.

Leave the middle XInteranimate command where it is.

Now you will be able to animate your output, whatever
it is. :-)

> Here is the code that I have been writting, but I don't know why it
> does not run at all, and it also does not show any error message.
> (note:I have the flow3.pro, the data files and my code in the same
> folder.)

I think we have covered this ground before. We are mostly
out of ideas here. But I *would* try setting up your 3D coordinate
system on the basis of the data values themselves, and not
the number of dimensions of the data arrays. I think that will be
more fruitful. :-)

```
  Scale3, xr=[Min(Vx), Max(Vx)], $
          yr=[Min(Vy), Max(Vy)], $
          zr=[Min(Vz), Max(Vz)], $
          AX=50, AZ=50
```

> 2. I would love to have an output window as the result that show in
> one of your procedures: fsc_surface. Meaning, that I could be able to
> rotate and zoom in the image. However, this is not a surface! Do you
> have any procedure that could do this for my images? This will be
> nicer than drawing a 3-D cube by myself. I tried the zoom command but
> it does not look nice either. And I tried the rotate keywords, but I
> have to change them every time and sort of guessing the angles....

Then you will have to re-write this program, which uses
commands that work in the *direct* graphics system, with
commands that work in the *object* graphics system. The
two systems are completely incompatible. I think, quite
honestly, you are quite far away from being able to write
an object graphics program. I think I would try to get
something working in direct graphics first. There will be
plenty of time to learn object graphics after you gain some
experience. :-)

Cheers,

David

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: animation
Posted by mary2747102 on Wed, 25 Aug 2004 15:43:20 GMT
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Hello, I just have one comment....

If I use your suggestion:
Scale3, xr=[Min(Vx), Max(Vx)], $
yr=[Min(Vy), Max(Vy)], $
zr=[Min(Vz), Max(Vz)], $
AX=50, AZ=50
My output window will only show a piece of the whole data.
On the other hand using the geographic coordinate system shows it all.
I was wondering why did you think that was going to be more fruitful?
Should I change something else besides this?
Kind Regards,
Mary T.

Subject: Re: animation
Posted by David Fanning on Wed, 25 Aug 2004 15:49:52 GMT
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Mary T writes:

> Hello, I just have one comment....
>
> If I use your suggestion:
> Scale3, xr=[Min(Vx), Max(Vx)], $
> yr=[Min(Vy), Max(Vy)], $
> zr=[Min(Vz), Max(Vz)], $
> AX=50, AZ=50
> My output window will only show a piece of the whole data.
> On the other hand using the geographic coordinate system shows it all.
> I was wondering why did you think that was going to be more fruitful?

Because you told me the program "does not run at all".
I presume this meant you couldn't see anything.

> Should I change something else besides this?

I would just keep doing whatever it is you are doing. :-)

Cheers,

David

--

David Fanning, Ph.D.
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Coyote's Guide to IDL Programming: http://www.dfanning.com/

Subject: Re: animation
Posted by mary2747102 on Wed, 25 Aug 2004 17:28:34 GMT
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Hi Dr. Fanning,
I followed the advice you gave to Neil Winrow to do a loop for the
animation.
It looked useful for me, but an error message appears on the first
line:

"% Variable is undefined: SET.
% Execution halted at: $MAIN$
3 C:\Documents and Settings\MaryT\Desktop\animation\ag25_animation.pro"

Can you let me know what is wrong with it, because I really do not
know. I have four files to animate, and I want the size of the images
to be 80x80.
THank you again,
MaryT

```
; Set up XInterAnimate

XInteranimate, Set[80, 80, 4], /Showload

  ; Open the data sets. Put flow3 vector plots in the
  ; XInterAnimate window and take a snap-shot of them.

FOR j=0,3 DO BEGIN
   filename = 'Iteration' + StrTrim(j,2) + '.out'
   OpenR, lun, filename, /Get_Lun
   A = FltArr(7,49L*49L*5L)
   ReadF, lun, A
   Free_Lun, lun

;create 3 dimensional arrays to hold vector data.
;the indices will be Velocity(x,y,z)

Vx=fltarr(49L,49L,5L)
Vy=fltarr(49L,49L,5L)
Vz=fltarr(49L,49L,5L)
 R=fltarr(49L,49L,5L)

 For i = 0L, 12004L Do Begin
```

```
   Vx(A(0,i)-1,A(1,i)-1,A(2,i)-1) = A(3,i)
      Vy(A(0,i)-1,A(1,i)-1,A(2,i)-1) = A(4,i)
      Vz(A(0,i)-1,A(1,i)-1,A(2,i)-1) = A(5,i)
R(A(0,i)-1,A(1,i)-1,A(2,i)-1) = A(6,i)

Endfor

Scale3, xr=[Min(Vx), Max(Vx)], $
        yr=[Min(Vy), Max(Vy)], $
        zr=[Min(Vz), Max(Vz)], $
        AX=50, AZ=50

posx=A[*,0]
posy=A[*,1]
posz=A[*,2]

    Flow3, Vx, Vy, Vz,$
    SX=posx,SY=posy,SZ=posz, $
    ARROWSIZE=.0100

;plots a cubical shape, vectors should appear inside this cube

PLOTS, [0,50], [0,0], [0,0], /T3D,color=200,line=9
PLOTS, [0,0], [0,50], [0,0], /T3D,color=200,line=9
PLOTS, [0,0], [0,0], [0,32], /T3D,color=200
PLOTS, [0,50], [0,0], [32,32], /T3D,color=200
PLOTS, [0,50], [50,50], [32,32], /T3D,color=200
PLOTS, [0,0], [50,50], [32,0], /T3D,color=200
PLOTS, [50,50], [50,0], [0,0], /T3D,color=200
PLOTS, [50,0], [50,50], [0,0], /T3D,color=200
PLOTS, [50,50], [50,50], [0,32], /T3D,color=200
PLOTS, [50,50], [0,0], [32,0], /T3D,color=200
PLOTS, [50,50], [50,0], [32,32], /T3D,color=200
PLOTS, [50,50], [50,0], [32,32], /T3D,color=200
PLOTS, [0,0], [0,50], [32,32], /T3D,color=200

Xinteranimate,Frame=j,window=!D.Window

Endfor

Xinteranimate

End
```

Subject: Re: animation

Posted by David Fanning on Wed, 25 Aug 2004 18:24:57 GMT
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Mary T writes:

> I followed the advice you gave to Neil Winrow to do a loop for the
> animation.
> It looked useful for me, but an error message appears on the first
> line:
>
> "% Variable is undefined: SET.
> % Execution halted at: $MAIN$
> 3 C:\Documents and Settings\MaryT\Desktop\animation\ag25_animation.pro"
>
> Can you let me know what is wrong with it, because I really do not
> know.
> --
> ; Set up XInterAnimate
>
> XInteranimate, Set[80, 80, 4], /Showload

Try, "XInteranimate, Set=[80, 80, 4], /Showload".

Cheers,

David

--
David Fanning, Ph.D.
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