Subject: Re: Convert 3D to 1D, apply fuction then convert back to 3D
Posted by penteado on Sun, 20 Jun 2010 23:15:54 GMT
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On Jun 20, 7:58 pm, Mat <m...@waikato.ac.nz> wrote:
> I am converting a image (5 bands) to 1D using reform. I then apply a
> function to this data and get a double "Array[3]"result. How do I then
> convert this result back into the origional image dimensions? eg:
>
> image= READ_IMAGE('test.tif')
> imagesize = SIZE(image, /DIMENSIONS)
> nx=imagesize[1]
> ny=imagesize[2]
> npix = nx*ny
> coords_2d = array_indices([nx,ny], lindgen(npix), /dimen)
> imageR= REFORM(image,5,npix)
>
> I then apply a function to this data and get a return in the form of:
>
> IDL> help, ret3
> RET3 DOUBLE = Array[3]
>
> I'm struggling to covert this back to a 3D image. Any ideas?

You are getting a result that is 1D (a 3-element vector). You can change it from its 1 dimension to 3, with a reform(ret3,1,1,3), but it would still have only 3 elements, not the original 5,nx,ny you want.

You need to think about what those 3 values represent with relation to you image and what you were looking for, which we cannot guess just from that description.

Subject: Re: Convert 3D to 1D, apply fuction then convert back to 3D
Posted by Mat on Mon, 21 Jun 2010 00:06:31 GMT
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On Jun 21, 11:15 am, pp <pp.pente...@gmail.com> wrote:
> On Jun 20, 7:58 pm, Mat <m...@waikato.ac.nz> wrote:
>
>
>
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>
> - Show quoted text -

The results are three water quality parameters. Actually it does not matter whether they are within one result or three separate results.

---

Subject: Re: Convert 3D to 1D, apply fuction then convert back to 3D
Posted by penteado on Mon, 21 Jun 2010 00:21:49 GMT
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On Jun 20, 9:06 pm, Mat <m...@waikato.ac.nz> wrote:
> The results are three water quality parameters. Actually it does not
> matter whether they are within one result or three separate results.

That still says nothing to answer your question. You called a function that used a (5,nx*xy) array and returned a 3-element array. We do not know how those 3 numbers relate to the 5*nx*ny values in the array, or what you were intending to get that also was supposed to have 5*nx*ny elements.

---

Subject: Re: Convert 3D to 1D, apply fuction then convert back to 3D
Posted by Mat on Mon, 21 Jun 2010 00:58:53 GMT
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On Jun 21, 12:21 pm, pp <pp.pente...@gmail.com> wrote:
> On Jun 20, 9:06 pm, Mat <m...@waikato.ac.nz> wrote:
>
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> elements.

No the function used the "imageR" from above which is a floating 1D 5 element array (reformed from a 5 band 3d image (satellite reflectance) and returned a 3-element array(water quality). The function is complex and not my code so I'm not in a position to post it sorry. So for each pixel in the original tiff I want the water quality (three parameters) in an image format. I hope this helps.

I think it is simpler if somebody posts a code to convert an image(5,nx*xy) to 1D, then convert it back to the original image. I think I could fill in the gaps.

---

Subject: Re: Convert 3D to 1D, apply fuction then convert back to 3D
Posted by penteado on Mon, 21 Jun 2010 01:14:54 GMT
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On Jun 20, 9:58 pm, Mat <m...@waikato.ac.nz> wrote:
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> element array (reformed from a 5 band 3d image (satellite reflectance)
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> pixel in the original tiff I want the water quality (three parameters)
> in an image format. I hope this helps.

imageR as you wrote above is 2D (5,npix), not 1D.

Now I think what you mean is that you have a 5-channel image (a (5,nx,ny) array), where you want to apply some function that takes each of the 5 bands for each pixel, and returns 3 values for each, which you want to put into a 3-channel image (3,nx,ny). If that is the case, this does not indicate any need for reforming, it could be done with something like

result=dblarr(3,nx,ny)
for i=0,ny-1 do for j=0,nx-1 do
result[*,j,i]=some_function(image[*,j,i])

> I think it is simpler if somebody posts a code to convert an
> image(5,nx*xy) to 1D, then convert it back to the original image. I
> think I could fill in the gaps.

I do not think you need to do it, but if you want to, it would be

image1d=reform(image2d,5L*nx*ny)

then, to get it back,

image2d=reform(image1d,5,nx,ny)

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Subject: Re: Convert 3D to 1D, apply fuction then convert back to 3D
Posted by Jeremy Bailin on Mon, 21 Jun 2010 12:15:13 GMT
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On Jun 20, 8:58 pm, Mat <m...@waikato.ac.nz> wrote:
> On Jun 21, 12:21 pm, pp <pp.pente...@gmail.com> wrote:
>
>> On Jun 20, 9:06 pm, Mat <m...@waikato.ac.nz> wrote:
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I don't think your function is giving you what you think. You are
giving it a 2D [5,N] element array, and it is returning a 1D [3]
element array. From your question, I think you're expecting either
a [3,N] element array or a [3,5,N] element array - i.e. each of those
three values for either every pixel, or every pixel-band combination.

-Jeremy.

---

Subject: Re: Convert 3D to 1D, apply fuction then convert back to 3D
Posted by Mat on Mon, 21 Jun 2010 22:55:05 GMT
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On Jun 22, 12:15 am, Jeremy Bailin <astroco...@gmail.com> wrote:
> On Jun 20, 8:58 pm, Mat <m...@waikato.ac.nz> wrote:
>
>
>
>
>
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>
> -Jeremy.- Hide quoted text -
>
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Thanks PP you have solved my problem. Thanks for your input Jeremy yes
I think the array dimensions were confusing me!