
Subject: Re: interpolate 3D matrix

Posted by [Helder Marchetto](#) on Mon, 02 Mar 2015 14:38:01 GMT

[View Forum Message](#) <> [Reply to Message](#)

On Monday, March 2, 2015 at 3:04:41 PM UTC+1, g.na...@gmail.com wrote:

```
> Hi
>
> I have two 3D arrays Ax and Ay with the following dimensions[100,4,4]=[time,x,y].
>
> I wanted to interpolate my matrices Ax and Ay and make them to have dimensions of [100,8,8].
A part of my code is shown below:
>
> size = 8
> Ax_2D_INT = fltarr(100,size,size)
> Ay_2D_INT = fltarr(100,size,size)
>
> for i=0, 99 do begin
>   Ax_2D = REFORM(Ax[i,*,*]) ;change 3D to 2D
>   Ay_2D = REFORM(Ay[i,*,*])
>
>   dimensions_I_need = size(Dindgen(size,size),/Dimensions)
>   dimensions_I_have = size(Ax_2D,/Dimensions)
>
>   X = cgScaleVector(Dindgen(dimensions_I_need[0]), 0, dimensions_I_have[0]-1)
>
>   Y = cgScaleVector(Dindgen(dimensions_I_need[1]), 0, dimensions_I_have[1]-1)
>
>   Ax_2D_INT = INTERPOLATE(Ax_2D,X, Y, /GRID)
>   Ay_2D_INT = INTERPOLATE(Ay_2D,X, Y, /GRID)
> endfor
>
> I got the following error but I couldn't figure out why.
> Attempt to subscript DIMENSIONS_I_HAVE with <INT    (    1)> is out of range.
```

I've tried your code and got no error. In your test, you don't provide Ax and Ay. I've built them up myself as

```
Ax = randomu(s,100,size,size)
```

```
Ay = randomu(s,100,size,size)
```

and the code runs without errors.

My guess is that Ax and/or Ay contain bad data (!null) or something similar.

Check your two input arrays.

Next thing I would highly recommend, is to avoid using variable names for which you also have functions. Don't use `size = 8`. This is just a source of trouble.

By the way, the error you described, happens when for example:

```
IDL> DIMENSIONS_I_HAVE = size(findgen(5), /dimensions)
```

```
IDL> print, DIMENSIONS_I_HAVE[1]
```

% Attempt to subscript DIMENSIONS_I_HAVE with <INT (1)> is out of range.

I made on purpose DIMENSIONS_I_HAVE have only one dimension. Then you cannot subscript the second dimension. So some when, your array Ax_2D has only one dimension. Try maybe printing "i" in the loop just before

Y = cgScaleVector(Dindgen(dimensions_I_need[1]), 0, dimensions_I_have[1]-1)

Then check the value of i that generated the error and have a look at that Ay[i,*,*].

Good luck,
Helder
