Subject: Re: Check if coordinate is in array
Posted by condor on Thu, 20 Feb 2003 22:30:22 GMT
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Thomas Gutzler <tgutzler@ee.uwa.edu.au> wrote in message
news:<3E544CAB.6020006@ee.uwa.edu.au>...
> Hi again.
>
> Here is the daily riddle:
> Is there a faster way to check, if a coordinate (2-element array) is
> element of an array of coordinates (2,n-element array) than this:
>
> FUNCTION is_element_of_2D, x, arr
> xidx = WHERE(arr[0,*] EQ x[0], c1)
> yidx = WHERE(arr[1,*] EQ x[1], c2)
> IF (c1 + c2 GT 0) THEN tmp = WHERE(MATRIX_MULTIPLY(xidx, $
> 1./TRANSPOSE(yidx)) EQ 1, c3) ELSE c3 = 0
> RETURN, c3 NE 0
> END
>
> Example:
> arr = [[1,2], [3,4], [3,2]]
> x = [3,4]
> y = [2,3]
> print, is_element_of_2D(x, arr)
> print, is_element_of_2D(y, arr)
>
> Tom

I don't know the context of this snippet of code, but in my math background there is the strong notion that all plane geometry should always be done in complex numbers as you get the whole world of Wirtinger calculus for free.

In IDL you get this:

```
IDL>  help,f,g
F               COMPLEX   = (      1.00000,      2.00000)
G               COMPLEX   = Array[4]
IDL>  print,g,format='(10(2i2,3x))'
 3 4    8 3    1 2    4 5
IDL>  print,where(g eq f)
          2
```

So if you could keep your coordinates in complex variables from the

beginning, you can match them and compare them to each other and such...