Subject: confused multiplying arrays Posted by paulartcoelho on Thu, 11 Nov 2010 21:11:47 GMT

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hello,

i've got two arrays:

```
IDL> help,area,fluxes
```

AREA FLOAT = Array[2000]

FLUXES FLOAT = Array[2000, 112864]

I want the i-th element in area AREA[i] to multiply all elements in the corresponding 2nd dimension in fluxes FLUXES[i,*] and then sum up all the 2000 resulting fluxes, i.e., using loop:

```
for i = 0,1999 do begin

TOTAL_FLUX = TOTAL_FLUX + AREA[i]*reform(FLUXES[i,*])

endfor
```

i've been trying to figure out (without success) how to compute TOTAL_FLUX without the loop using TOTAL(). ideas?

thx

p.

Subject: Re: confused multiplying arrays
Posted by David Gell on Fri, 12 Nov 2010 14:30:36 GMT
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```
On Nov 11, 3:11 pm, Paula <paulartcoe...@gmail.com> wrote:
> hello,
> i've got two arrays:
> IDL> help, area, fluxes
> AREA
               FLOAT
                         = Array[2000]
> FLUXES
                FLOAT
                           = Array[2000, 112864]
> I want the i-th element in area AREA[i] to multiply all elements in
> the corresponding 2nd dimension in fluxes FLUXES[i,*] and then sum up
  all the 2000 resulting fluxes, i.e., using loop:
>
> for i = 0,1999 do begin
     TOTAL_FLUX = TOTAL_FLUX + AREA[i]*reform(FLUXES[i,*])
 endfor
```

- > i've been trying to figure out (without success) how to compute
- > TOTAL FLUX without the loop using TOTAL(). ideas?

>

> thx

> p.

Use the matrix multiply operator, TOTAL_FLUX=TOTAL(AREA # FLUXES).

IDL can be a little confusing about matrix multiplication. It has two operators # and ## that perform the operation.

A#B = B##A.

Subject: Re: confused multiplying arrays
Posted by paulartcoelho on Fri, 12 Nov 2010 16:10:52 GMT
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living and learning...:) thanks for the tips about the matrix multiplications operators, they were new to me.

Subject: Re: confused multiplying arrays
Posted by penteado on Fri, 12 Nov 2010 16:21:23 GMT
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On Nov 12, 2:10 pm, Paula <paulartcoe...@gmail.com> wrote:

- > living and learning...:)
- > thanks for the tips about the matrix multiplications operators, they
- > were new to me.

That is indeed the best option. I should have noticed that array operation was equivalent to a product.

By the way, for cases when operands must be transposed before the product, there is the matrix_multiply() function, which has keywords to specify that one or both operands must be transposed, to save the memory and time that would be consumed by transposing large things.