
Subject: confused multiplying arrays

Posted by [paulartcoelho](#) on Thu, 11 Nov 2010 21:11:47 GMT

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

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

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

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

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

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.
