Subject: Re: operating on 3-d arrays
Posted by thompson on Mon, 10 Mar 1997 08:00:00 GMT
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John Keck <jwk@phys.columbia.edu> writes:

> The IDL manual encourages avoiding FOR...NEXT loops by using the vaunted
> matrix capabilities of IDL, so I have been trying to handle
> three-dimensional arrays.
>
> I need to multiply three vectors to produce a three-dimensional array.
> One would think that it would suffice to use the matrix multiplication
> operator (#) as one does with a pair of vectors to get a two-dimensional
> array. However with three vectors, IDL gives the error message
>
> % Operands of matrix multiply have incompatible dimensions...
>
> Anyone have a simple way to manipulate three (and higher) dimensional
> arrays in IDL?
>

This might do what you want. Suppose you had three vectors, called A, B, and C
that you wanted to multiply together such that the result R had the property

```
R(i,j,k) = A(i) * B(j) * C(k)
```

You could then use the following commands:

```
R = A # B
R = R(*) # C
R = REFORM(R, N_ELEMENTS(A), N_ELEMENTS(B), N_ELEMENTS(C))
```

Bill Thompson