
Subject: operating on 3-D arrays

Posted by [John Keck](#) on Fri, 07 Mar 1997 08:00:00 GMT

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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 with these facilities.

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?

Thanks,

John Keck

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:

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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
