



Unfortunately, I am unaware of a better way of doing arithmetic of the form

Matrix `_DO_SOMETHING_HERE_` vector

where the vector is applied to all the rows/columns of the matrix without looping or beefing up the vector to match the matrix.

Two more things. First a question. How huge is HUGE? What are the real dimensions of the 2 matrices and vectors. Also, do you really need them both in memory? Like, do you need all the past time values in memory at this time?

Second a statement. If the answer is Yes, i need everything at all times. Then doing

```
a= x# make_array()
```

is going to be slow. Because the `#` operator is doing arithmetic. You'll likely be better off using `rebin` and `reform` to achieve the same goal.

-Russell

On Friday, October 24, 2014 10:32:43 AM UTC-4, JTMHD wrote:

```
> Hi Guys,
>
>
> What I am trying to do is analogous to the following
>
> .....
> .....
> timedistancearray =FINDGEN(3,3)
>
> timezero = timedistancearray(*,0)
>
> timedistance_minustimezero = FLTARR(3,3)
>
> FOR t=0,2 DO timedistance_minustimezero(*,t)=timedistancearray(*,t)-timezero
> .....
> .....
>
> The thing is in this case the array is HUGE so I don't think the FOR loop would be optimum.
>
> The other thing I thought about was taking the timezero array and changing it into a 2D array of
the correct dimensions, e.g.
>
> .....
> .....
>
```

```

> timedistancearray =FINDGEN(3,3)
>
> timezero = timedistancearray(*,0)#MAKE_ARRAY(1, 3, /DOUBLE, VALUE = 1D0)
>
> timedistance_minustimezero = timedistancearray-timezero
>
> .....
> ;
>
> But again, this perhaps isn't ideal as it will involve creating an equally huge array to do the
operation which will have add to the memory overhead.
>
> I keep hearing that if you want to get good at IDL you have to exploit the array operations
properly - what other options do I have here?
>
> Thanks in advance
>
> Jonathan

```

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Subject: Re: IDL Way to have a single row/collum act on all rows/collums in an array  
Posted by [wlandsman](#) on Fri, 24 Oct 2014 15:11:25 GMT  
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```

1. Looping over 1 dimension is usually fine. The important thing is to do many operations on each iteration, which you are doing in this case.

2. You want to rewrite the equation to avoid use of the asterisk on the left hand side

```

FOR t=0,2 DO timedistance_minustimezero[0,t]=timedistancearray[* ,t]-timezero

```

[http://www.idlcoyote.com/code\\_tips/asterisk.html](http://www.idlcoyote.com/code_tips/asterisk.html)

3. As noted by Russell -- do you need to keep both arrays in memory? If not, then you can write it like this:

```
FOR t=0,2 DO timedistancearray[0,t]=timedistancearray[* ,t]-timezero
```

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Subject: Re: IDL Way to have a single row/collum act on all rows/collums in an array  
Posted by [JTMHD](#) on Mon, 27 Oct 2014 12:13:45 GMT

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Hi Guys

Thanks for the tips. They're fairly big - around 200000 by several thousand depending on how long I run the simulations for, and this will be potentially extended to 2D+t soon (but with less resolution in any given spatial direction).

In the end I've rewrote it so that it doesn't need both in memory, as suggested. I've also avoided the use of the asterisk.

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