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Subject: Inverting large matrices using LA\_LUDC and LA\_LUSOL.  
Posted by [Pitufa](#) on Thu, 05 Jan 2006 00:15:11 GMT  
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Hi,

I was wondering if someone had a tip for my following problem:

I am trying to calculate a matrix of the form:

$$W = M^{(-1)} \# A$$

where  $M = A \# B$ , and:

```
size(A) =  
  2      3840      1942      9      7457280  
size(B) =  
  2      1942      3840      9      7457280
```

I do this (or rather try) by using:

```
M = MATRIX_MULTIPLY(B,A)  
LA_LUDC, M, Index, /DOUBLE, STATUS=STATUS  
if status ne 0 then stop, 'Status ne 0.'
```

```
W = LA_LUSOL( M, Index, A, /DOUBLE )
```

But  $W \# B$  is not equal to the identity matrix (the maximum difference with the identity matrix is 6788.3314 !!), and the status returned is 0.

However, if I do the following:

```
M = MATRIX_MULTIPLY(B,A)  
M2 = M  
LA_LUDC, M, Index, /DOUBLE, STATUS=STATUS  
if status ne 0 then stop, 'Status ne 0.'  
W = LA_LUSOL( M, Index, M2, /DOUBLE )  
then the maximum difference with the identity matrix is 0.27161849  
(even if the first case gave me this, I still have a problem).
```

IDL uses LAPACK routines to do the above operation, and apparently this is the best option for this kind of operations.

Does anyone know what I might be doing wrong?

Thanks you for your time,

Carolina.

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