Subject: Re: IDL inverse matrix problem??
Posted by chris_torrence@NOSPAM on Fri, 23 Jan 2015 20:06:05 GMT
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On Friday, January 23, 2015 at 12:56:35 PM UTC-7, Amin Farhang wrote:
> Hi,
>
> Let me try an example in IDL and matlab for example:
>
>
> In IDL:
>
> IDL> Am =[[-6.8599934d+16,-8.3590379d+16,-1.8742199d+17,1.5697952d+1 7,
1.1607144d+17],$
> IDL> [-1.2228319d+17,-1.4900449d+17,-3.3409009d+17,2.7982470d+17, 2.0690379d+17],$
> IDL> [-1.4972730d+17,-1.8244569d+17,-4.0907020d+17,3.4262599d+17, 2.5333938d+17],$

> IDL> [-1.0612015d+17,-1.2930950d+17,-2.8993102d+17,2.4283828d+17, 1.7955584d+17],$
> IDL> [-1.1696076d+17,-1.4251900d+17,-3.1954867d+17,2.6764521d+17, 1.9789821d+17]]
> IDL> Bm = la_invert(Am)
> IDL> Cm = Am ## Bm
> IDL> print,Cm
>   0.99999999 -3.7252903e-09 -1.2107193e-08 -7.4505806e-08   8.9406967e-08
>   -1.4901161e-08   1.0000000 -1.2107193e-08 -1.0430813e-07   1.1920929e-07
>   -1.4901161e-08 -7.4505806e-09   0.99999997 -1.4901161e-07   8.9406967e-08
>   -1.4901161e-08 -7.4505806e-09 -1.4901161e-08   0.99999990   8.9406967e-08
>   -1.4901161e-08 -2.6077032e-08 -2.0489097e-08 -1.4901161e-07   1.0000002
>
> As you see the AA-1 is not a complete identity matrix
>
>
> In matlab:
>
> Am = [[-6.8599934e+16 , -8.3590379e+16 , -1.8742199e+17 , 1.5697952e+17 ,
1.1607144e+17];...
> [-1.2228319e+17 , -1.4900449e+17 , -3.3409009e+17 , 2.7982470e+17 , 2.0690379e+17];...
> [-1.4972730e+17 , -1.8244569e+17 , -4.0907020e+17 , 3.4262599e+17 , 2.5333938e+17];...
> [-1.0612015e+17 , -1.2930950e+17 , -2.8993102e+17 , 2.4283828e+17 , 1.7955584e+17];...
> [-1.1696076e+17 , -1.4251900e+17 , -3.1954867e+17 , 2.6764521e+17 , 1.9789821e+17]];
>
> Bm = inv(Am);
> Cm = Am * Bm
>
>   1.0000   -0.0000   -0.0000   -0.0000   0.0000
>   0   1.0000   -0.0000   0.0000   -0.0000
>   -0.0000   -0.0000   1.0000   0   0
>   -0.0000   0.0000   -0.0000   1.0000   0.0000
>   -0.0000   0   -0.0000   -0.0000   1.0000

>
> As you see the result is a identity matrix
>
>
> Best,

Hi Amin,

I don't think that last example is actually the identity matrix. I would bet that Matlab is only printing out a few digits, so it just looks like the identity matrix. What happens if you print out all of the digits using a Matlab command like fprintf('%13.9f\n', Cm)?

-Chris
