Subject: Re: IDL inverse matrix problem??
Posted by Craig Markwardt on Thu, 22 Jan 2015 21:40:41 GMT

On Thursday, January 22, 2015 at 2:24:06 PM UTC-5, Amin Farhang wrote:

> Am I doing something wrong?
>

I think you are expecting too much from the numerical precision available. Your matrix has a huge range of singular values (factor of 10 billion), so that's going to cause some undesirable round-off errors. The matrices are correct, to within the round-off error of the solution.

If this is very important to you, I think you need to read a lot more about linear algebra. Computing the inverse directly is usually the worst thing you can do. The standard practice is to factor the matrix instead, and solve your problem indirectly. Numerical Recipes has a good amount of beginner discussion on this. Then you can graduate to Golub and van Loan, /Matrix Computations/. Singular Value Decomposition might tell you more about the structure of your matrix.

Craig