Subject: Re: diagonal dominant
Posted by on Thu, 31 Jan 2013 08:09:33 GMT
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Den torsdagen den 31:e januari 2013 kl. 07:33:57 UTC+1 skrev Gompie:
> Thanks again Mats !!!
>
> As suggested by you i did not do any removal of duplicates and used svd..results are a bit better but still there is noise. Are there any variants or alternatives of svd that I can try and see if noise reduces.

SVD should be numerically better than any Gauss elimination scheme and it can handle linear dependencies, so you should probably stick with it.

Can you describe how you are using the SVD to solve your equation? You have mentioned calculating the inverse of A but that is not necessary. From what I've read, it is better to multiply the B vector by the inverse SVD components in succession than calculating the inverse of A and then multiplying B with that.

Also, if your matrix is singular (or near-singular) are you zeroing any of the inverted singular values? What cutoff are you using for that? Are you using single or double precision?

Did you know that the SVD gives you the condition number as the ratio between the smallest and the largest singular values? If that determinant you are calculating really is zero your matrix is singular and you should see that in the condition number (or in the fact that the smallest singular values are zero or at least very small compared to the largest singular value.

> It does appear that the X values are following a curve.By noise I mean that the computed X has some errors but when I make a polynomial fit of values in X, the fit resembles the solution.

I have no idea what you meant by that. Are you first calculating a solution X to the equation AX=B and then fitting a polynomial to that X? If that polynomial fit is the end result you need, why don't you formulate your model so you can fit the polynomial directly to the measurements in B?