
Subject: Re: diagonal dominant

Posted by [lecacheux.alain](#) on Wed, 30 Jan 2013 16:05:13 GMT

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Le mercredi 30 janvier 2013 15:26:11 UTC+1, Gompie a écrit :

> Hi,

>

> I have a matrix(256,256) and I want to convert it into diagonal dominant form.

>

> What is the best way to do it. Does IDL have function to do it?

>

> Gompie

I do not well understand your question. A matrix is diagonal dominant or it is not: you cannot change that by any converting method. Now, if you want to find a space in which your matrix is diagonal, your problem is solved by eigenvalue decomposition. In IDL, you can use EIGENQL and EIGENVEC functions or equivalently their Lapack counterparts: LA_EIGENQL, LA_EIGENVEC and LA_EIGENPROBLEM.

Hoping to have answered.

alain.

Subject: Re: diagonal dominant

Posted by [Gompie](#) on Wed, 30 Jan 2013 16:23:30 GMT

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I basically want to solve $AX=B$.

When I give `determ(A)` idl gives 0.0000 with floating point exception. So I am not sure if idl does a good job at getting inverse.

So, I wanted to use gauss elimination on A matrix and apply the routine `gs_iter.pro`. The routine says that the input matrix should be diagonal dominant. So I thought if by pivoting I can make the array diagonally dominant.

While A is a (256,256) matrix. I have the flexibility of replacing rows in A with new ones if the A is singular with a particular set of rows.

Any ideas.

Gompie
