Subject: Eigenvalue problem
Posted by Georg Wiora on Fri, 05 Jul 2002 09:27:45 GMT
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Hi!

I have a mathematical problem with eigenvalues and -vectors.
I need a special solution for the usual eigenvalue problem A*x = lambda*x where x is a vector and A a
positive definite and symmetric real matrix.
Using the EIGENQL function in IDL you can easily compute the eigenvectors and eigenvalues for that
equation.

My problem is that I need a constrained solution in the form
  A*v = B*v*D
A is again the matrix to find the eigenvalues for, B is the constraint matrix and v is the vector of eigenvalues and D the matrix of eigenvectors.

Matlab offers a function for that. Here is the excerpt from their online help:
  [V,D] = eig(A,B) produces a diagonal matrix D of generalized eigenvalues and
  a full matrix V whose columns are the corresponding eigenvectors so
  that A*V = B*V*D.
(see http://www.mathworks.com/access/helpdesk/help/techdoc/ref/ei g.shtml for the full documentation)

Does anyone have an IDL-function that does the same job? Or does anyone know how to do it with the IDL
matrix tools?

Thanx for any advice!

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