

Re: high-precision eigenvalue solver

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- *From:* "Michael Hennebry" <hennebry@xxxxxxxxxxxxxxxxxxxxxxxxxxxx>
 - *Date:* 13 Dec 2005 09:04:00 -0800
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Hans Mittelmann wrote:

> if you need the eigenvalue closest to zero try inverse iteration. You
> need a linear system solver for your matrix then.

I'm not sure, but I got the impression that what he needed was not a small eigenvalue, but the small difference of two non-small eigenvalues.

It's why I suggested reformulation.

Reformulation might be necessary anyway.
If the matrix entry errors are around 10^{*-16}
and he needs an eigenvalue around 10^{*-16}
he is out of luck unless the errors are correlated.
Correlated errors suggest the entries in the matrix
should be formulas instead of the results of formulas.
I wonder how big the matrix is.

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- *Follow-Ups:*
 - ◆ [**Re: high-precision eigenvalue solver**](#)
◇ *From:* Hans Mittelmann

- *References:*
 - ◆ [**high-precision eigenvalue solver**](#)
◇ *From:* wakun
 - ◆ [**Re: high-precision eigenvalue solver**](#)
◇ *From:* Robert Israel
 - ◆ [**Re: high-precision eigenvalue solver**](#)
◇ *From:* wakun
 - ◆ [**Re: high-precision eigenvalue solver**](#)
◇ *From:* Hans Mittelmann

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