Fast solution to very small eigenvalue problem

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Hi all.

I need to find the eigenvector corresponding to the largest eigenvalue of a 4x4 matrix very quickly (because I'm doing it on hundreds of thousands of 4x4 matrices). The current code I'm maintaining has a simple Jacobi solver, which is (a) slow (it only does 30K matrices/s on my PC), and (b) probably overkill, as it returns all of the eigenvectors. I've vaguely looked at LAPACK etc, but those routines are AFAIK optimised for good performance on large matrices, not small ones.

Does anyone have any suggestions as to the most efficient way to solve this problem? Extreme accuracy is not required. 4x4 is probably small enough that there's an analytic solution :).

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Mark Mackey
"The determined Real Programmer can write Fortran programs in any language."
                 − "Real Programmers don't use Pascal"
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