Subject: Re: Sparse matrix algorithms
Posted by the_cacc on Mon, 03 Dec 2001 14:56:19 GMT
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> did they say when a new edition can be expected?

No, but I didn't ask. Email nr@nr.com and they'll write back promptly (in my experience).

> ... Some of my matrices are
> extremely skinny, with an extremely large "long" dimension (on
> the order of millions), and I have to compute the matrix
> multiply transpose(A)##A which in the sparse algorithm loops
> over the smaller dimension. Filling this out might be costly
> (timewise) for me, though I'm just speculating.

I think you may be right - storing millions of zeros does defeat the purpose. In my case, 10^4 zeros is not such a burden. From what you say it seems you may be attempting to solve Ax = b by using A^T A x = A^T b. If so, don't forget that matrix algebra is associative so you can do A^T (Ax) rather than (A^T A)x and save some CPU cycles.

> ...the sparse
> bi-conjugate gradient solver implemented (since they could rip
> it directly out of NR).
>

I found this to be slower than the conjugate gradient solver, which you'll have to implement yourself (v. easy by the way) and which is guaranteed to converge for the problem A^T A x = A^T b.

Ciao.