

compiling taucs problem (Re: solving $Ax=b$ with sparse A)

Source: <http://sci.tech-archive.net/Archive/sci.math.num-analysis/2007-08/msg00056.html>

- *From:* "H.S." <hs.saDELETEmix@xxxxxxxxxx>
 - *Date:* Wed, 08 Aug 2007 13:01:47 -0400
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Evgenii Rudnyi wrote:

I am trying to solve $Ax=b$ problem, where A is a sparse matrix. The matrix A is saved in compressed column format.

If your matrix is positive definite, I would recommend you TAUCS

<http://www.tau.ac.il/~stoledo/taucs/>

Best wishes,

Evgenii

I am trying to use taucs with my own source code to solve a sparse system of equations, $Ax=b$ (as I have mentioned earlier in this thread). But I am not able to get the taucs library to compile.

So I instead made a little stand alone program just see if taucs by itself works for me. Here is my C++ source file:

```
$> cat spmat.cc
#include <taucs.h>

#ifdef __cplusplus
extern "C" {
#endif
extern taucs_ccs_matrix * taucs_ccs_create (int m, int n, int nnz,
int flags);
extern void taucs_css_free (taucs_ccs_matrix* );
#ifdef __cplusplus
}
#endif // __cplusplus

int main(){
int C,R,k;
```

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```
C=20;
R=20;
k=4;
taucs_ccs_matrix *taucAsigmaIMat;
taucAsigmaIMat = taucs_ccs_create(C, R, (k+1)*C,
TAUCS_DOUBLE|TAUCS_SYMMETRIC);

//cleanup
taucs_ccs_free(taucAsigmaIMat);
return 0;
}
```

Here is the command I am using to compile this file (I am using Taucs header files and the various libraries that come with it directly):

```
$> g++ -I$HOME/tmp/taucs/build/linux -I$HOME/tmp/taucs/src
-L$HOME/tmp/taucs/lib/linux -ltaucs -L$HOME/tmp/taucs/external/lib/linux
-latlas -lcbblas -lf77blas -llapack -lmetis
$HOME/tmp/taucs/external/lib/linux/blas_aux.o spmat.cc -o spmat
```

(that is one single long line above). As you can see, I just extracted taucs source code in `~/tmp/taucs` and then compiled it in that directory and am using the resulting libraries directly from there.

And the following is the compiler output I get:

```
$> g++ -I$HOME/tmp/taucs/build/linux -I$HOME/tmp/taucs/src
-L$HOME/tmp/taucs/lib/linux -ltaucs -L$HOME/tmp/taucs/external/lib/linux
-latlas -lcbblas -lf77blas -llapack -lmetis
$HOME/tmp/taucs/external/lib/linux/blas_aux.o spmat.cc -o spmat
In file included from /usr/include/c++/4.1.3/backward/complex.h:31,
from /home/hs/tmp/taucs/src/taucs.h:132,
from spmat.cc:1:
/usr/include/c++/4.1.3/backward/backward_warning.h:32:2: warning:
#warning This file includes at least one deprecated or antiquated
header. Please consider using one of the 32 headers found in section
17.4.1.2 of the C++ standard. Examples include substituting the <X>
header for the <X.h> header for C++ includes, or <iostream> instead of
the deprecated header <iostream.h>. To disable this warning use
-Wno-deprecated.
/home/hs/tmp/taucs/src/taucs_private.h:45: error: previous declaration
of taucs_ccs_matrix* taucs_ccs_create(int, int, int, int) with C++
linkage
spmat.cc:6: error: conflicts with new declaration with C linkage
```

So, what am I doing wrong here?

thanks,
->HS

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