

CHOLMOD: Partition

CHOLMOD: Partition, an optional software module for CHOLMOD providing nested dissection fill-reducing orderings for CHOLMOD.

```
cholmod_sparse *A ;
cholmod_dense *x, *b, *r ;
cholmod_factor *L ;
double one [2] = {1,0}, m1 [2] = {-1,0} ; /* basic scalars */
cholmod_common c ; /* start CHOLMOD */
cholmod_start (&c) ; /* read in a matrix */
A = cholmod_read_sparse (stdin, &c) ; /* print the matrix */
cholmod_print_sparse (A, "A", &c) ; /* A must be symmetric */
if (A == NULL || A->stype != 0)
{
    cholmod_free_sparse (&A, &c) ;
    cholmod_finish (&c) ;
    return (0) ;
}
b = cholmod_ones (A->nrow - 1, A->stype, &c) ; /* b = ones(n,1) */
L = cholmod_analyze (A, &c) ; /* analyze */
cholmod_factorize (A, L, &c) ; /* factorize */
x = cholmod_solve (CHOLMOD_A, L, b, &c) ; /* solve Ax=b */
r = cholmod_copy_dense (b, &c) ; /* r = b */
cholmod_sdmult (A, b, m1, one, &c, &c, &c) ; /* r = r - Ax */
printf ("norm(b-Ax) %g\n", cholmod_norm_dense (r, &c) ; /* print norm(r) */
cholmod_free_factor (&L, &c) ; /* free matrices */
cholmod_free_sparse (&A, &c) ;
cholmod_free_dense (&r, &c) ;
cholmod_free_dense (&x, &c) ;
cholmod_free_dense (&b, &c) ;
```

CHOLMOD: Partition: an optional software Module for CHOLMOD. This Module provides nested dissection fill-reducing orderings for CHOLMOD. This Module requires [METIS, by George Karypis \(University of Minnesota\)](#), which is available under an Apache v2.0 license. If licensing for METIS other than Apache v2.0 is required, this must be obtained from the Regents of the University of Minnesota.

Technology ID
T11847

Category
Software as a Service

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