

ERREU04 - Simple detection of singularity in burst orders

Summary:

This test validates the emission of an error message when a simple singularity is detected (blocking absent or superabundant) by the direct linear solveurs (MUMPS, LDLT and MULT_FRONT) used in burst orders (TO FACTORIZE, TO SOLVE).

1 Principle of the test

This test is used to validate the emission of some messages by the orders TO FACTORIZE or TO SOLVE in the case of a symmetrical matrix:

- First case: it misses a blocking. In this case one obtains FACTOR_20/77 for LDLT, MULT_FRONT and MUMPS when $NPREC > 0$ and FACTOR_57 for MUMPS when $NPREC < 0$.
- Second case: there is a superabundant blocking. One obtains FACTOR_21/76 for LDLT, MULT_FRONT and MUMPS when $NPREC > 0$ and FACTOR_42 for MUMPS when $NPREC < 0$.
- Last case: it is checked that the message is transmitted FACTOR_80 when the parameter is used TYPE_RESOL=' SYMDEF' of the solver MUMPS whereas the matrix to be reversed is not symmetrical definite positive.