ZZZZ352 – Validation keyword SOLVEUR / ELIM_LAGR = 'YES'

Summary

This test validates the keyword SOLVEUR/ELIM_LAGR = 'YES' who allows to remove in a matrix the equations corresponding to the linear relations dualized, which sometimes makes it possible to make the matrix definite positive.

There is only one modeling (A).

1 Principle of the test

The problem is an elastic unspecified problem mechanical very simple.
The boundary conditions kinematics are not commonplace: there are relations between several degrees of freedom.

The calculation of reference is obtained with the solvor MUMPS and while using ELIM_LAGR=' NON' (defect).

One does the same calculation with ELIM_LAGR=' OUI' and it is checked that one gets the same result.

The method of elimination of the equations of Lagrange is described in [R5.03.05]

The validation is complete:

- It is checked that the method functions for the solveurs: MULT_FRONT, MUMPS, LDLT and PETSC
- It is checked that the method functions with not-homogeneous linear relations
- One checks that the solution is well reconstituted on all the degrees of freedom, including the degrees of freedom of Lagrange (use of the order STAT_NON_LINE).

2 Summaries of the results

The got results are very good.