

ZZZZ315 – Validation of the order PROD_MATR_CHAM (real matrix)

Summary:

The goal of the test is to validate the programming of the order PROD_MATR_CHAM for the real matrices (routine `mrmult.f`).

One checks 3 cases for boundary conditions **not** homogeneous:

- 1) Boundary conditions eliminated (AFFE_CHAR_CINE)
- 2) Boundary conditions dualized (AFFE_CHAR_MECA + DDL_IMPO + LIAISON_DDL)
- 3) Mixture between boundary conditions dualized and eliminated

1 Principle of the test

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For each case:

- One solves (orders `TO_FACTORIZE + TO SOLVE`) a linear system $K \times U = F$ with K and F known. One obtains U .
- One carries out then the product $FF = K \times U$ with the order `PROD_MATR_CHAM` and it is checked that FF is equal to F .

2 Validation

When the boundary conditions all are dualisées, it is checked that FF is quite equal to F on all the degrees of freedom.

On the other hand, when there exist boundary conditions eliminated, FF is not equal to F that on the not eliminated degrees of freedom. On the eliminated degrees of freedom, FF is null.