

Operator PROD_MATR_CHAM

1 Drank

To carry out the product of a matrix by a vector.

The matrix is a data structure of the type `matr_asse` : it is with actual values or complex, symmetric or not symmetric. The vector is a data structure of the `cham_no` type. It is with actual values or complex. One imposes who matrix and vector are both to actual values or both with complex values (if not to use before commands `COMB_MATR_ASSE` [U4.72.01] or `CREA_CHAMP` [U4.72.04]) and that they divide same classification (see command `NUME_DDL` [U4.61.11]).

Product a concept of the `cham_no` type.

2 Syntax

```
uass      [cham_no] = PROD_MATR_CHAM      (  
          ♦MATR_ASSE      =m ,              / [matr_asse_DEPL_R]  
                                               / [matr_asse_TEMP_R]  
                                               / [matr_asse_DEPL_C]  
                                               / [matr_asse_PRES_C]  
  
          ♦CHAM_NO=u          ,              [cham_no]  
  
          ◊TITER=titr          ,              [l_Kn]  
  
          )
```

the quantity associated with the cham_no result of the command (uass) is the same one as that of U.

3 Operands

3.1 Key word **MATR_ASSE**

◆MATR_ASSE=m

Name of the matrix (concept `matr_asse_*`) to multiply.

3.2 Key word **CHAM_NO**

◆CHAM_NO=u

Name of the vector (concept `cham_no`) to multiply.

3.3 Key word **TITER**

◇TITER=titr

Title which one wants to result give to

4 the Checks

- Checking that the matrix and the vector to be multiplied are both to actual values or both with complex values.
- Checking of coherence: the operands of the `matr_asse_*` type and `cham_no` type must share same classification.

5 Example of use

Produces matrix vector:

```
u_mv_1 =PROD_MATR_CHAM      ( MATR_ASSE = mat_1,  
                             CHAM_NO = u_1,  
                             )
```

For example, one can use this command to create a second member vector from the product of the mass matrix and a vector acceleration obtained by the command `DYNA_LINE_TRAN`. This second member vector can be used as loading for a static computation.