Operator ASSE_MATRICE

1 Goal

To create a matrix by assembly of elementary matrices.

The produced matrix is “hollow”; it is stored in form “Morse”.

Product a structure of data of the type matr_asse_*.
2 Syntax

```plaintext
my [matr_asse_*] = ASSE_MATRICE

(  ♦ MATR_ELEM = mel,
    / [matr_elem_DEPL_R]
    / [matr_elem_DEPL_C]
    / [matr_elem_TEMP_R]
    / [matr_elem_PRES_C]

  ♦ NUME_DDL = naked,
    [nume_ddl]

  ◊ CHAR_CINE = cha,
    / [char_cine_meca]
    / [char_cine_ther]
    / [char_cine_acou]

  ◊ SYME = 'YES',

  ◊ INFORMATION = /
     / 1,
     / 2,
     [DEFECT]
)

if MATR_ELEM [matr_elem_DEPL_R] then [*] → DEPL_R
[matr_elem_DEPL_C]    DEPL_C
[matr_elem_TEMP_R]    TEMP_R
[matr_elem_PRES_C]    PRES_C
```

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3 Operands

3.1 Operand MATR_ELEM

♦ MATR_ELEM = mel,
Name of the concept matr_elem_* to assemble.

3.2 Classification and storage

♦ NUME_DDL = naked,
Specify the classification of the equations of the assembled system and the storage of the matrix.

3.3 Operand CHAR_CINE

◊ CHAR_CINE = cha,
Name of the kinematic load to take into account in the matrix assembled for a treatment by elimination of the degrees of freedom forced (see order AFFE_CHAR_CINE [U4.44.03]).

3.4Operand SYME

with SYME = ‘YES’
This argument can take only the value ‘YES’. In this case, one forces the symmetrization of the matrix after assembly. Thus, if the matrix created by assembly $K$ is not-symmetrical, the keyword SYME = ‘YES’ allows to symmetrize it and replace it by:

$$ma = \frac{1}{2}(K + K^T)$$

3.5Operand INFORMATION

◊ INFORMATION
The impression of information allows on the assembled matrix

1 : pas d’impression,
2 : impression amongst stored terms and of the coefficient of conditioning of the degrees of freedom of the type ‘LAGR’,
4 Example

```plaintext
subdued = ASSE_MATRICE ( NUME_DDL = naked,
                        MATR_ELEM = mel,
                    )
```

Note:

Elementary matrices of `mel` will be assembled according to classification `naked`.

It is necessary thus that this classification takes into account all degrees of freedom of these elementary matrices (in particular degrees of freedom corresponding to the dualisation of the boundary conditions). One will thus make:

```plaintext
mel = CALC_MATR_ELEM (OPTION = ‘RIGI_MECA’,
                        MODEL = Mo, LOAD = condlim,)
naked = NUME_DDL (MATR_RIGI = mel)
subdued = ASSE_MATRICE (NUME_DDL = naked, MATR_ELEM = mel,)
```

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